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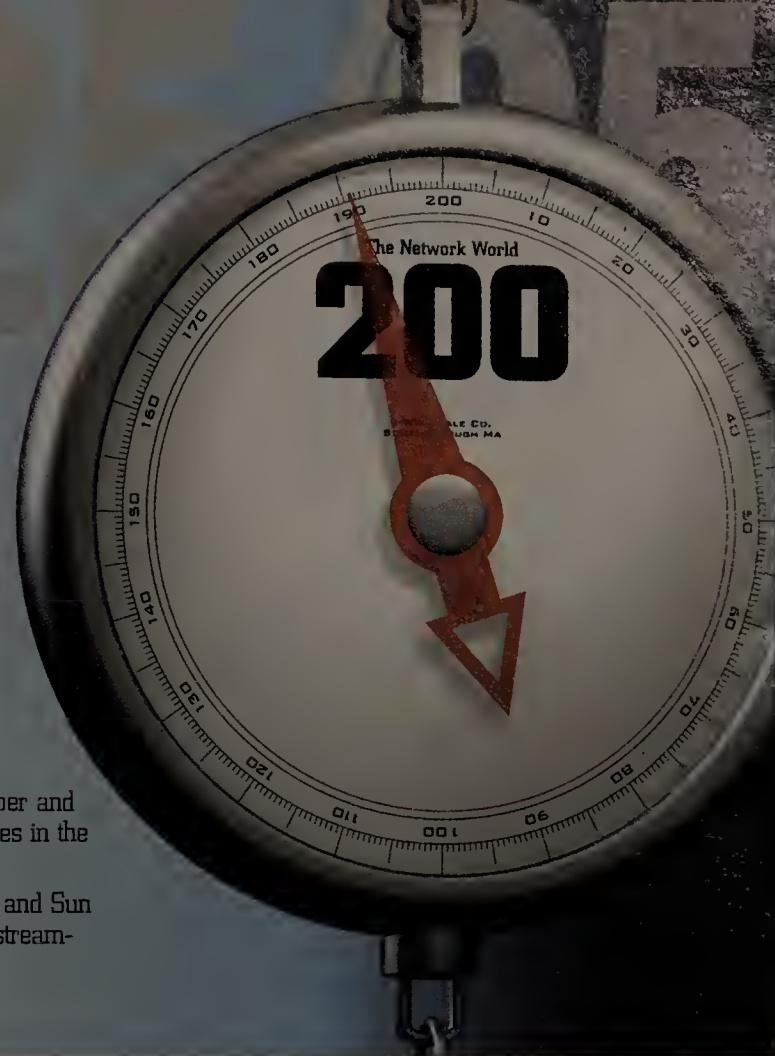
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Network World 200

Revenues climb for a second year at North America's largest network companies, while a record number of NW200 vendors are in the black. Special coverage begins on page 56, where you'll find:

- A sector-by-sector analysis.
- The NW200, ranked by revenue and alphabetically.
- A look at the fastest-growing and most cash-rich NW200 companies.
- In-depth with Juniper and Novell, two companies in the midst of makeovers.
- How AT&T, Nortel and Sun use virtual work to streamline costs.
- 10 start-ups to watch, and more.



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NW200 Database

Get the information on the top 200 network vendors in North America with our online database. Sort alphabetically or by revenue and see who made the biggest gains in 2004 and who had the biggest drops. **DocFinder: 6843**

Network World Radio: The mobile threat

Are cell phones the next big target for attackers and viruses? With news of a new mobile worm coming out nearly every week, security managers should start to worry about the potential threat. Oliver Friedrichs, senior manager of Symantec Security Response, discusses the current threats and how to protect yourself. **DocFinder: 6844**

Network Life: Spotlight on home network security

Keeping home networks free from viruses, bugs, spyware and worms isn't easy. The latest edition of *Network Life* offers strategies on securing your home network; 10 ways to stop spyware; tests of a wireless LAN security system and a WLAN extender; and more. **DocFinder: 6451**

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Online help and advice

Nutter's Help Desk

Catching a problem user
Help Desk guru Ron Nutter offers suggestions to a reader who asks: "A complaint reached my desk in which several students complained that another student in their building was e-mailing/sharing pictures that, to put it nicely, were in poor taste. Since we have to have proof before confronting the student, I am trying to figure out the best way to get it." **DocFinder: 6846**

In-house Counsel

New York court upholds tax on nonresident telecommuters
Telework attorney Nicole Belson Goluboff reports that the state's top court says applying "convenience of the employer" rule in Tennessee is constitutional. **DocFinder: 6847**

Telework Beat

Fighting for fiber
NetWorker Managing Editor Toni Kistner says the Digital City Expo brings together "Minutemen" of community broadband. **DocFinder: 6848**

Home Base

To thine own self be true
Columnist Sandra Gittlen offers tips on how to win the right clients for your business. **DocFinder: 6849**


Small-Business Tech

Remote office wrap up
Columnist James Gaskin looks at new products that make remote links easier and less expensive. **DocFinder: 6850**

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News

Vendors are getting a jump on Interop

New security, wired and WLAN gear on tap, as well as Gigabit-speed PoE for non-PoE switches.

■ BY PHIL HOCHMUTH

A number of hardware vendors are jumping the gun with product announcements this week in advance of the network industry's most-anticipated annual trade show next week in Las Vegas.

Products emerging over the two-week span will include Extreme Networks' first foray into security and intrusion prevention, as well as wired and wireless LAN (WLAN) gear from Enterasys and others. Also on tap are soft-

ware upgrades for F5 Networks' BIG-IP device that add improved caching and TCP offload, and the

**NETWORLD
+ INTEROP**

first Gigabit-speed Power over Ethernet device that allows non-PoE Gigabit gear to deliver power to Wi-Fi access points or IP phones.

The annual network industry trade show — kicking off May 2,

with 17,500 attendees expected — will have a new location, moving from the Las Vegas convention center to the Mandalay Bay Convention Center. The show also is changing its name from NetWorld+Interop to simply Interop. The NetWorld+ prefix has been used since the once separate, LAN-focused NetWorld trade show merged with Interop in 1994. The original Interop, which focused on Internet technology standards, was founded in 1986.

Before the conference gets under way, Extreme this week is

expected to introduce Sentriant, an appliance designed to detect anomalous network traffic patterns across a LAN and respond to new worms and viruses — or so-called “zero day” network threats, which have no known signatures among the security community. The box is a Linux-based network appliance that attaches via a Gigabit Ethernet link to an Extreme Black-Diamond 10K backbone switch, running Extreme's Clear-Flow software — a standard feature on Extreme switches that

enforces network security and usage policies.

Extreme says Sentriant can provide an additional layer of protection to networks that use in-line intrusion-prevention system (IPS) and intrusion-detection system (IDS) appliances. In-line security products that sit between end-user switches and the core, or behind WAN routers at the edge, can be compromised by denial-of-service attacks. Such attacks could neutralize the IDS/IPS box and allow worms or attack traffic

See Interop, page 12

Ellison-backed Pillar Data readies for debut

Four years in the making, start-up pushing a multi-tiered storage architecture.

■ BY DENI CONNOR

Oracle CEO Larry Ellison's \$100-million baby — storage start-up Pillar Data Systems — is expected to deliver as early as June what analysts are calling a unique storage subsystem that stores data on disk based on its importance to a customer's business.

The company hasn't been talking — and still isn't — but a wealth of information recently posted to www.pillardata.com paints a fairly detailed picture of what the company is planning.

Founded four years ago in San Jose, Pillar Data is funded by Ellison's private investment group, Tako Ventures, to the tune of a reported \$100 million. Lawrence Investments, the parent company of Tako Ventures, has interests in approximately 30 technology and biotechnology companies. Pillar Data employs about 300 people and is headed by

Mike Workman, a veteran of IBM and Connor Peripherals.

Pillar's Axiom Storage System is expected to let customers combine the storage resources from network-attached storage (NAS) and storage-area network (SAN) environments into a single pool that can be managed and accessed from a single console.

Business-critical database or transaction-oriented data is stored close to the outside of the disk, where its seek time is less and where it can be quickly accessed. (Seek time refers to the amount of time it takes to position disk heads so data can be read.) Less-important data such as e-mail is stored closer to the disk spindle, where access takes longer. The least-important data — file and print data — is stored on the inside of the disk where the seek time is longest.

Rules-based software called the Pillar Storage Manager would let IT administrators create policies that determine the placement of data across these three tiers of storage.

This concept of storing data by disk spindle is not new but is as yet untried in open systems — Unix, Linux and Windows storage.

PROFILE: PILLAR DATA SYSTEMS

Location: San Jose

Founded: June 2001

Key personnel: Mike Workman, president and CEO; Nancy Holloran, COO; Mark D'Apice, vice president of hardware and product engineering; Michael Brewer, vice president of software engineering and architecture. All are former IBM employees.

Product: Axiom Storage System, tiered NAS/SAN.

Funding: \$100 million from Tako Ventures, Oracle CEO Larry Ellison's investment firm.

Fun fact: Company mascot is Workman's dachshund Waffles, which is nicknamed Clams.

IBM last tried it with its Direct Access Storage Device mainframe storage.

“It is a very uncommon approach,” says Randy Kerns, senior analyst for Evaluator Group. “Years ago, we tried to do things like that with IBM mainframe disks and it was really too much to manage. Doing this in an open or distributed systems approach is unique. There's a lot of skepticism whether that's a good idea or not.”

Pillar's Axiom storage system consists of a half-dozen modular rack-mountable appliances. The Pilot Policy Controller lets an IT

administrator set policies that would provision storage, perform snapshot backups and volume copy operations for data protection, as well as manage the other appliances. The Pilot connects to storage controllers called Slammers, which act to move NAS or SAN data between host computers and disk drives. The disk drive enclosures are called Bricks, each of which can be configured with Serial Advanced Technology Attachment or Fibre Channel drives.

With this flexibility, customers can configure a NAS-only system, a SAN-only system or a combina-

tion of the two. The entire system connects to a network via 1G-bit/sec Ethernet or to a SAN via 2G-bit/sec Fibre Channel.

Axiom can store 2T to 166T bytes of data, according to the company's data sheets. Critical components include dual hot-swappable power supplies, disks and battery backed-up RAM.

The Axiom storage array will initially compete for the mid-tier enterprise market with products such as EMC's Clariion CX700 and HP's Enterprise Virtual Array. Eventually, Axiom will compete with EMC's Symmetrix and Hitachi's TagmaStore.

“The question you have to ask is, ‘Do we already have enough storage vendors for a market that is pretty well supplied with products such as EMC's Clariion or Xiotech's Magnitude?’” says Arun Taneja, founder and senior analyst for Taneja Group. “Pillar needs to differentiate themselves from these other vendors to be successful. There is no such thing as infinite funding no matter what Ellison says.”

Although pricing is unknown, analysts say it will need to be significantly less than prices from other vendors. ■

■ Read about Ellison's other company, Oracle, and its latest road show. PAGE 35.

News Bits

Qwest ups bid for MCI yet again

■ Qwest late last week said it had made what it called its "best and final offer" to purchase the outstanding shares of MCI for about \$9.9 billion. The new offer raises the cash portion of Qwest's bid by \$2.50 per share, to \$16 per share. Qwest maintained its offer of \$14 per share in stock and plans to cover a recent 40 cents per share dividend paid by MCI to stockholders. Qwest's new offer is about 30% higher than the \$7.64 billion offer from Verizon that was accepted by MCI on March 29, Qwest said. Qwest set a deadline of 5 p.m. April 30 for MCI to consider its offer. Verizon responded in a statement: "As we move through the proxy process, we will continue to assess the situation and intend to take the necessary steps at the appropriate time to secure shareholder approval and complete our pending transaction."

Microsoft set to release Windows Server 2003 R2 beta

■ Microsoft this week plans to release the second beta test version of Windows Server 2003 R2, an update to Windows Server that the company expects to ship in the fourth quarter. The software will be available for download on Microsoft's Web site, probably on Tuesday, a company spokeswoman says. The release will coincide with Microsoft's Windows Hardware Engineering Conference in Seattle and follows the limited release of the second beta last week to a select group of testers via the Betaplace Web site. A first beta test version of Windows Server 2003 R2 was released to about 1,500 testers in December. Microsoft expanded that pool to 2,800 early this year, but the first beta was still considered a "private" beta. The second beta will be a public beta and is set to run until the fourth quarter, when the final version of the software is scheduled to ship. Windows Server 2003 R2 is an interim release of Windows Server built on top of Windows Server 2003 Service Pack 1, which was released in late March. R2 will include most of the feature packs Microsoft has released since the initial Windows Server 2003 debuted, as well as new storage management capabilities and features such as branch server management and Active Directory Federation Services.

Ballmer, McNealy to fill in gaps about deal

■ Microsoft CEO Steve Ballmer and Sun Chairman and CEO Scott McNealy will host an event in mid-May to detail progress the companies have made since the signing of a 10-year collaboration agreement last year. The event will be the first time both CEOs publicly discuss their collaboration since the deal was closed in April 2004. Users and analysts have criticized the companies, saying the collaboration, which is intended to focus on interoperability, has not resulted in many tangible results. "Scott and I are going to do sort of a state of the union report [on] where we have gotten in a few weeks," Ballmer

COMPENDIUM

Bandwidth at 37,000 feet

Werner Vogels checks in from an SAS flight from Seattle to Copenhagen, where he is trying out the Boeing Connexion in-flight wireless service: "The service is not too bad; high latency, but sufficiently downstream bandwidth to get e-mail in. Not much bandwidth for sending. . . ." Fly high with Compendium at www.nwfusion.com, DocFinder: 6852.

The Good The Bad The Ugly



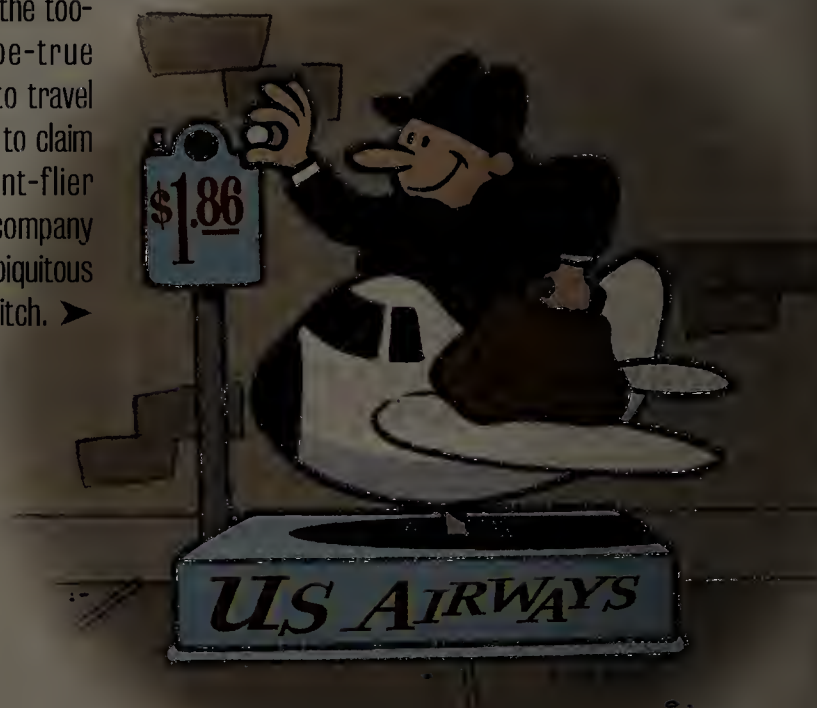
Ganging up on 'em. New York Attorney General Eliot Spitzer is leading a coalition of activists aiming to better protect citizens against identity thieves and hackers through tougher statutes and law enforcement. Meanwhile, AOL last week launched a campaign in conjunction with online security provider Cyota to block access to known phishing sites.



Should have known. To coincide with the 40th anniversary of Moore's Law, Intel offered to pay \$10,000 for a copy of the magazine in which the historic computing theory was first announced. Not-so-coincidentally, the next day a University of Illinois library noticed that one of its two copies of that magazine was missing. Now university libraries that have copies of the issue are pulling them for safe-keeping, even though Intel said it would only buy one from a library.



Not going to help. Already operating under bankruptcy protection, US Airways added to its own financial woes last week by mistakenly selling roundtrip flights for \$1.86 to more than 1,000 customers — some of whom said they snapped up the too-cheap-to-be-true tickets not to travel but in order to claim the frequent-flier miles. The company called it a ubiquitous computer glitch. ➤



said last week in a presentation at a Microsoft event. A Sun spokeswoman confirmed that an event is being planned for mid-May.

Zombies plaguing Chinese 'Net users

■ China's rapid Internet growth has brought with it a somewhat disturbing side effect: multiplying zombies. Zombies, or Internet-connected computers infected by worms or viruses and under the control of a hacker, are used to launch denial-of-service attacks, or send spam or phishing e-mail messages. An average of 157,000 new zombies are identified each day, and 20% are in China, security company CipherTrust reported last week. CipherTrust analyzed e-mail collected throughout March and the first half of April from customers worldwide. It found that 57% of spam originated from the U.S., down from 86% during June and July of last year. As of January, there were 94 million Internet users in China, up 18% from the year before, according to the China Internet Network Information Center.

Web services spec takes step forward

■ BEA Systems, IBM, Microsoft and Tibco last week submitted the Web Services Reliable Messaging specification they have been developing to the Organization for the Advancement of Structured Information Standards. The specification lays out how to guarantee the delivery of messages between applications, especially those executing business transactions. OASIS for the past two years has been working on a similar specification called WS-Reliability, which was originally submitted in January 2003 by Fujitsu, Hitachi, Oracle, NEC, Sonic Software and Sun. OASIS has not decided if it will accept the specification. The WS-RM group hopes OASIS will form a technical committee to review its work and has said it would not charge royalties in conjunction with the WS-RM specification.

Microsoft unveils management road map

■ BY JOHN FONTANA

LAS VEGAS — Microsoft last week showed it is starting to stitch together the first pieces of its ambitious plan to build a management platform, but a Windows-based utility computing environment is still years down the road.

At its annual Microsoft Management Summit, the company laid out the next two years of its Dynamic Systems Initiative (DSI) strategy, which is focused on building its management platform around the next versions of System Management Server (SMS) 2003, Microsoft Operations Manager (MOM) 2005, Visual Studio 2005, Windows Server 2003 R2 and Virtual Server 2005. The strategy includes plans to support management of non-Windows platforms, including Solaris and Linux.

Those pieces will be complemented with a set of tools under the brand name System Center. The first two are slated for delivery at year-end for capacity planning and backup/restore.

Microsoft also began to explain its XML-based modeling technology called System

Definition Model (SDM), which lets developers create a model that explains how an individual application or system should operate. And the company announced upcoming support for WS-Management, a Web services protocol it has been developing with its partners that is key to extending management across multiple platforms.

The plans are the first major updates to DSI, introduced in 2003 as a 10-year plan to create a comprehensive management platform for Windows. Now Microsoft says its goal is for DSI to become an "enterprise management platform" that can manage network systems beyond Windows.

During his conference keynote, CEO Steve Ballmer said the company wants to provide users with "what you need for enterprise management tools that work at the kind of scale... interoperability and heterogeneity that's required in the organizations that you serve."

It was a signal that Microsoft is gunning for established management vendors such as IBM, Computer Associates and HP.

"I'm glad to see Microsoft has stepped back from a stance of taking over the world

Challenges

Microsoft last week said it is in the first of three waves of development that will result in a comprehensive management platform for Windows. The company faces a number of challenges to fulfilling the promise of what it calls the Dynamic Systems Initiative.

- Educate developers on how to build into applications the System Definition Model (SDM), an XML-based document that describes performance, security and other operational requirements.
- Update management software such as System Management Server, Microsoft Operations Manager and Windows Server to read and react to SDM data.
- Extend management beyond systems and applications into business processes.

and realized there is a non-Windows world out there," said an IT architect from a manufacturing firm who requested anonymity. He says Microsoft's challenge now is execution and educating users about how to build a DSI platform.

"They have to start broadening the platform if they want to play in the enterprise space," says Audrey Rasmussen, an analyst with Enterprise Management Associates.

Microsoft said SMS 2003 and MOM 2005 are the foundations for a family of products under the name System Center, a change from original plans to develop System Center as a monolithic management hub.

Microsoft said SMS and MOM are due for a major upgrade in 2006-2007 that will align them with Longhorn and add role-based access, configuration management,

See Microsoft, page 18

and then it hits you://

LINUX IS AS GOOD ON THE DESKTOP

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SurfControl unveils spyware stopper

■ BY ELLEN MESSMER

SurfControl this week is expected to announce anti-spyware software called Enterprise Threat Shield, joining the growing ranks of vendors that promise relief from adware and spyware code downloaded from the Internet.

Enterprise Threat Shield, expected to ship May 4, will include Windows-based desktop software to detect and eradicate thousands of types of spyware and adware, according to John Murphy, product manager at SurfControl. Intended for up to 5,000 users, the product will come with a Windows server-based administrative console to set anti-spyware policy on desktops, distribute new spyware/adware signatures and consolidate reporting.

"In addition, this allows customers to customize signatures," Murphy says. In addition to creating custom anti-spyware signatures, the controls can be directed at limiting use of designated applications on desktops.

The product also is intended as a way to limit use of instant messaging, peer-to-peer file-sharing and game applications through policy enforcement.

SurfControl also markets Web filtering and spam-control products, and some customers say they intend to test the SurfControl anti-spyware software when it's available.

Danny McCampbell, senior network analyst at automotive manufacturing firm Mahle in Morristown, Tenn., says his 500-employee company tries to ward off adware and spyware by blocking access to Web sites. "The worst of it is Gator" from Claria, he says.

Mahle is evaluating a range of anti-spyware products, including Computer Associates' PestPatrol, with an eye toward budgeting for it next year.

SurfControl's Enterprise Shield costs \$30 per seat for 100 users, with volume discounts. ■

Study: Outsourcing losing luster

■ BY JENNIFER MEARS

While organizations turned to outsourcing during tough economic times to cut costs and boost efficiencies, a study by Deloitte Consulting has found that few organizations have realized the benefits they expected and some are bringing outsourced projects back in-house.

The survey of 25 large organizations with a combined \$50 billion in outsourcing contracts found that 70% have had negative experiences with outsourcing projects and are now taking a more cautious approach. One in four companies has brought outsourced functions back in-house and nearly half have failed to see the cost savings they anticipated as a result of outsourcing.

The study, titled "Calling a Change in the Outsourcing Model" and released last week, concludes that companies will need to alter their approach to outsourcing as the economy expands. While cost savings will re-

main important, companies need to look at outsourcing more strategically to determine when handing off IT projects makes sense, says Ken Landis, a senior strategy principal at Deloitte.

"When revenues were down [outsourcing] made a lot of sense and it was a perfect tool for publicly held companies to manage their earnings," Landis says. "But in a growth environment, the questions of complexity and friction, the difficulty in relating cultures between two firms and a lot of other questions come to the fore."

"Cost is still absolutely critical, but firms tend to switch from being cost focused to growth focused as the economy grows," he says. "What they're finding is that in growth mode outsourcing makes them arthritic, slow to respond."

Companies originally looked to outsourcing to reduce costs, increase flexibility and simplify operations, but the reality has been that outsourcing has added a layer of complexity that has resulted in unexpected costs and

Pulling back?

A Deloitte Consulting survey of 25 large companies found that organizations are reining in their use of outsourcers.

Have you brought any outsourced services back in-house? Yes - 64% No - 36%
Reasons included:

- Improved quality/management by insourcing - 56%.
- Functions became strategic/care - 44%.
- Increased cost savings by insourcing - 33%.
- Vendor inflexibility - 11%.

SOURCE: DELOITTE CONSULTING OUTSOURCING STUDY, OCTOBER-DECEMBER 2004

management needs, the study says. Indeed, 62% of the companies surveyed said there was a larger management drain than expected as a result of outsourcing, and more than half said they couldn't free up internal resources for other projects as they had hoped.

"Outsourcing is now a question of business strategy, it's not a cost-reduction question," Landis says. "I'm not saying that outsourcing is going away, but firms need to be more conservative in their approach to outsourcing."

The study suggests five new outsourcing models that are more strategically focused, including using outsourcers for short-term help when transforming an IT function, sending only commodity projects to outsourcers and using outsourcers to spread out risk for areas such as disaster recovery.

"Outsourcing as we know it will increasingly lose luster," the report concludes. "Vendors and organizations will become more selective about the deals they pursue." ■

MCI offering more specific SLAs

■ BY DENISE PAPPALARDO

MCI is beefing up service-level agreements for its Managed Network Service customers with guarantees that relate directly to individual networks as well as the carrier's backbone.

MCI has changed its mean time to repair (MTTR) guarantee to a time to repair (TTR) guarantee of three-and-a-half hours, and it has changed its network availability guarantee to a site availability guarantee.

MCI has made "significant changes" to its SLAs, says Steven Harris, a research manager at IDC. "Carriers use mean time to repair as an average for all customers over the month. Your network could be down much longer, but if the average for all customers falls [under the SLA] you get no credit."

If MCI misses its TTR SLA users receive a credit of 5% of their monthly reoccurring charge.

MCI's TTR SLA is ahead of those offered by competitors. AT&T is offering its managed data service customers a four-hour MTTR SLA. Sprint offers a four-hour TTR guarantee for its managed service customers.

MCI also has improved its network availability SLA. Managed Network Service customers with dual routers and dual circuits and those with ISDN, DSL or dial-up backup were

MCI promising faster repairs, better uptime

Carrier tweaking SLAs for Managed Network Service customers.

Guarantee	Old SLA	New SLA
Time to repair (TTR) in U.S.	24-hour MTTR	3.5-hour TTR
TTR for third-party network connectivity	None	Four-hour TTR
TTR international*	Five-hour MTTR	Four-hour TTR
TTR remote international**	Eight-hour MTTR	Six-hour TTR
Availability in U.S. for users with dual routers and circuits	99.9% network	100% site
Availability in U.S. for users with ISDN, DSL or dial-up backup	99.9% network	99.9% site
Change management	Within 72 hours	Within 24 hours

*COVERS USERS IN 21 COUNTRIES

**COVERS USERS OUTSIDE THE 21 COUNTRIES

offered a 99.9% network availability guarantee. MCI now is offering a 100% site availability SLA for users with dual routers and circuits. The carrier is offering a 99.95% site availability guarantee for customers with ISDN, DSL or dial-up backup.

Similar to MCI's TTR change, the carrier's site availability guarantee also offers users a more tangible SLA that applies directly to their network, Harris says. Network availability SLAs guarantee that, on average, a carrier's network is available to all customers a certain percentage of time over a one-month span. The SLA is not specific to each customer connection. MCI now guarantees that each endpoint on a customer's network can access MCI's backbone.

The carrier is now also offering a four-hour

TTR guarantee for third-party network connectivity. The guarantee only applies to third-party network connectivity from 10 service providers: AT&T, Sprint, Verizon, SBC, BellSouth, Qwest, NTT, Equant, BT and Deutsche Telekom. MCI says it is regularly reviewing the list and might add carriers.

MCI also is now offering its global Managed Network Service customers a four-hour TTR guarantee for users in 21 countries outside the U.S.

The updated SLAs are specifically for new Managed Network Service customers that also have an MCI network and maintenance contract. Current customers can contact their sales representative about applying the new SLA to their contract. ■



Security

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Polycom targets group Web conferencing

■ BY JASON MESERVE

Continuing the trend to make conferencing easier — both Web and video — Polycom this week plans to debut a conference phone attachment for sharing PC-based data in small group meetings. It also will unveil network equipment designed to make it easier to connect multiple users in one call across networks.

With the new QSX appliance, Polycom is looking to tap its 1.7 million conference phone customers who want to share application or presentation data from their PCs without the need for a third-party Web conference provider. The QSX is a hub of sorts, which connects a phone, PC and projector/display. A presenter connects a PC or laptop to a QSX via a VGA monitor cable. He does not need access to a corporate network or to install any additional applications on his machine.

The product works two ways: If there are QSX devices on either end of a call, a non-audible signal is used over the analog network to share IP address information between the two, and determine which one

will be the "host." Then a standard H.323 connection is made over the data network to send the screen data. A second option is for up to 10 to connect via a Web browser. QSX can provide an internal IP address for local users, and be configured for a second, publicly routable IP address for those outside.

Viewers only need a Java-enabled browser to view the content. For Web-based viewers, content is sent over Port 80, says Greg Goldfarb, director of product management for voice communications at Polycom.

"There's a lot of overhead to setting up traditional Web conferencing such as logging people in," says Ben Saitz, senior director of operations at Doubleclick and a QSX beta tester. Web conferencing services "are great for a large set of [participants], but if you have a group of people all working on the same project or customer problem, this is great way of getting people together."



The new QSX device attaches to any public switched telephone network-based Polycom phone and passes PC-based content (applications, presentations) to up to 10 participants viewing through a Web browser without the need for a third-party service provider or per-minute charges.

Polycom is not going after the general Web conferencing market, dominated by WebEx, Raindance and Genesys. Instead, it's targeting users that just need screen-sharing capability without a lot of extra features, says Shanmuga Purushothaman, program leader for conferencing and collaboration at analyst firm Frost & Sullivan. A similar software-only offering is available from Glance Network for a monthly fee of about \$50 for an individual user. QSX is priced starting at \$1,299.

On the network side, Polycom is releasing a new line of conferencing products called ReadService, which consists of ReadiConvene, ReadiManager and ReadiRecord.

ReadiConvene is an audio/video-conferencing bridge that includes the most popular features of Polycom's high-end MGC line multi-point control units in an easier-to-use package for IP-only installations. ReadiManager provides a Web-based interface for managing endpoints from Polycom and competitors such as Tandberg, and for

scheduling calls. ReadiRecord will capture audio from a videoconference call, not the video- and data- (PC content) streams.

Tandberg and Radvision offer competing bridge and management appliances.

Polycom says it plans to release ReadiConvene, starting at \$36,000, and ReadiManager, starting at \$34,000, later this quarter. ReadiRecord is scheduled to be available in the third quarter, starting at \$24,000. ■

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Interop

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to enter a network. Because Sentries hang off of a backbone LAN switch, it is protected from attacks at the edge.

The Sentry appliance was recently put through a trial on the network at Texas Christian University in Fort Worth, which has a backbone network of several Extreme BlackDiamond 10K switches.

"We've already got intrusion detection and firewalls, but some of the [attacks and security issues] we face get around those," says Bill Senter, technical services manager for the university. The Sentry appliance "is supposed to recognize any abnormal network behavior and do something

about it." Based on tests Senter has conducted, the device seems promising, he says.

The appliance also can be used to create virtual IP-based decoy hosts, according to Suresh Gopalakrishnan, Extreme's marketing vice president. This lets users slow the spread of malicious code just enough to gain forensic data on the source and method of attack of viruses or worms, rather than just killing the traffic without inspecting the origin of the worm or virus, Gopalakrishnan says.

When deployed with a BlackDiamond 10K switch, the appliance can direct the core switch, or other Extreme switches anywhere on a LAN, to react to network attacks, Gopalakrishnan says. This could include reducing bandwidth for suspicious traffic



Eight SecureStack B2 switches can be linked in a 20G bit/sec stacking loop.

flows, shutting down network access, or diverting traffic to a secure virtual LAN (VLAN) segment for further inspection.

The Sentry appliance costs \$42,000 and requires a BlackDiamond 10K switch, which starts

at about \$50,000.

WLAN Security

For adding security to WLANs, Enterasys this week is launching the RoamAbout Security Switch, the vendor's first separate security appliance for managing and securing WLANs. The device, which is based partly on software from Trapeze Networks, attaches to any LAN segment and is used to provide centralized configuration and control of thin WLAN access points — low-feature devices that provide basic 802.11 radio connectivity, but leave tasks such as authentication, QoS and security to a back-end device.

Enterasys says its current RoamAbout access points, which are full-featured devices that use an

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WLAN vendors convene at Interop

Thin access points, mesh routers and new switches take center stage.

■ BY JOHN COX

Wireless LAN vendors will be out in force at the NetWorld+Interop show in Las Vegas next week with new or improved products.

Israeli WLAN start-up Extricom will use the show to launch thin access points and a central switch that boast patent-pending technology that detects and in effect sidesteps radio interference. As a result, executives say, access points can be packed much closer together than they can with conventional WLANs, boosting overall throughput and network reliability.

Extricom achieves this in part by using an approach similar to that adopted by ill-fated start-up AirFlow (see story at www.nwfusion.com, DocFinder: 6853): by moving all media access control (MAC) functions from the access point to the central switch. The access point has no software, acting simply as a conduit passing wireless packets to the central switch.

The next step is to avoid radio interference. Extricom does this with an algorithm in programmable silicon in the central switch. The key change Extricom does in hardware is what rivals have tried to do in software, according to CEO Gideon Rottem. Via the algorithms, the switch can "see" the entire radio environment in real time — all the access points and wireless clients, and every packet moving between them. If a transmission from one access point is interrupted or degraded, the switch can have another Extricom access point handle communication with that client on a packet-by-packet basis.

"If Access Point 1 and Access Point 2 transmit at the same time, you'll have interference," Rottem says. "So the switch doesn't let them. By knowing at all times the complete radio map of the network, we can assess when and where to transmit, and through which access

point."

Compared with conventional WLANs, Extricom lets more users be closer to a larger number of access points, and therefore lets them connect at the maximum possible throughput rates of 5M to 7M bit/sec for 802.11b and 20M to 25M bit/sec for 802.11g and 802.11a, Rottem says.

Sangikyo, a network engineering firm in Yokohama, Japan, has been beta testing the Extricom switch, initially for wireless VoIP covering the four floors of its headquarters. Sangikyo set up the switch and eight access points, testing up to 10 WLAN phones over 802.11b and 802.11a connections. "We've been able to support up to 10 simultaneous calls on one" access point, says Matthew Drechsler, a test engineer with Sangikyo's business development division.

In one test, Drechsler put two access points near each other, placed 10 calls on one of them, and then unplugged that access point's Ethernet cable. "All the clients roamed smoothly to the remaining access point with no delay or perceivable change in voice quality," he says. "It was quite impressive."

"You have guaranteed throughput for all clients, no co-channel interference, and voice that is smooth and latency free," he says.

To support high guaranteed data rates, Extricom users will have to add more access points in a given area, compared with other WLAN systems, Drechsler says. Currently the product supports only small networks. "We would like to see Extricom come out with a large-scale switch," he says.

The eight-port Extricom switch, with eight access points, will ship in May, priced between \$8,000 and \$14,000 depending on quantity and options, such as Power over Ethernet. The switch is intended to cover one floor of a building, or a branch office. The company is expected to ship a 32-port switch in the fall.

In other Interop wireless news:

- Bluesocket plans to unveil its first line of WLAN access points, designed to work with its BlueSecure WLAN controllers. The controllers centralize security and management for third-party access points. By offering its own brand of access point, Bluesocket now can sell a complete range of WLAN products: access points, controllers and a recently introduced line of radio frequency sensors. The access points will support 802.11a/b/g WLAN clients. The first to ship will be the 1500 model, expected around July. Pricing has not been finalized.

- Tropos Networks is scheduled to spotlight three WLAN mesh products. The key product is the 5210 Outdoor MetroMesh router, which is targeted at large, outdoor wireless mesh networks and now supports the 54M bit/sec 802.11g WLAN standard. The previous model was 802.11b, with a data rate of 11M bit/sec. In a wireless mesh, nodes communicate with each other to route packets to one or more gateways, which hand them off to a wired network or the Internet. The approach minimizes cabling costs and lets a WLAN be deployed more easily over a large area. Also new will be a companion indoor unit, the 3210 router, and a vehicle-mounted router, the 4210. The outdoor router costs \$3,400, the indoor router is \$1,850. The vehicle-mounted product is scheduled to ship later this year with price to be announced then.

- 3Com plans to show how its customers with older WLAN access points, such as the 8259 model, can replace the software in these devices so they can be managed and secured by the company's newer WLAN switches. The older access points were stand-alone devices that had to be managed separately. By giving them a new software load, these devices now become visible to the switch. 3Com's WLAN switch and thin access points are based on the Trapeze Networks products. The software is available for free on 3Com's Web site. ■

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IP address on a LAN, can be configured to run as thin access points with the RoamAbout Wireless Switch. The RoamAbout Wireless Switch, with support for 24 access points, will cost \$6,500 with availability in June. Up to 120 access points can be supported on a system, with a maximum price of \$22,000.

The company also will be introducing the SecureStack B2 line of midrange Layer 2 stackable switches. These switches include 24- and 48-port versions, with the option of 10/100M or 10/100/1000M bit/sec ports, as well four fiber-based Gigabit uplink ports.

Up to eight SecureStack B2 switches can be linked via Enterasys' proprietary 20G bit/sec stacking interconnect technology, which allows switches to be linked in a loop for redundancy. The stack can be managed as a single device with one IP address. PoE options are available on the

SecureStack B2 line.

The switches come with basic security features, such as 802.1X authentication, and support for Dynamic VLAN Assignment (IEEE RFC3580), which can allow a switch to move unsecure or unauthenticated traffic to a secure quarantine or guest VLAN, or shut off network access to unapproved machines.

Such features already are deployed on SecureStack C2 switches (and currently shipping Layer 2/3 version of the SecureStack line) at Trinity Health Systems, which manages two hospitals in Steubenville, Ohio.

"With the ever-changing privacy regulations in healthcare, security is a huge issue for us," says Tom Kiger, IT director at Trinity Health Systems. "It used to be that anyone with a laptop could walk into a hospital, plug into a port and get some kind of network access." He says locking down ports on switches closes this kind of gap in network security.

A firmware upgrade will be

available in June for the switches that will let them work with Enterasys' NetSite Atlas Policy Management architecture, which lets network policies, user profiles and access permissions be assigned to specific switch ports. This upgrade will cost \$2,000. The SecureStack B2 series pricing ranges from \$2,000 for a 24-port 10/100M bit/sec switch to \$4,800 for a 48-port 10/100/1000 switch with PoE.

F5 caches in

F5 will launch hardware this week, introducing its BIG-IP Application Accelerator 3400. F5 says the new device can help Web servers speed up the rate of serving content fivefold, while allowing users to deploy fewer servers. Two new modules are included in the product: Fast Cache, which is used to cache static and dynamic Web content; and TCP Express, which is a combination of hardware and software that offloads TCP/IP processing from Web servers to a

BIG-IP appliance.

With Fast Cache, F5 says that customers can transfer as much as 90% of a Web server's content — including static images and text files, and dynamic database and Java content — to the cache, which lets server processors run at a lower utilization level, which prevents hardware-related failures in servers.

The company says TCP Express can take more work off of server hardware by offloading TCP/IP connections from server network interface cards and CPUs to a BIG-IP device. Like the caching feature, this offloading allows for

more CPU cycles to be focused on application processing instead of running the network software stack.

Also expected to debut at Interop is PowerDsine's 6000G PoE midspan device, which can support 10/100 and Gigabit Ethernet links. The midspan device sits between Ethernet switches and a patch panel, and injects up to 15 watts of power based on 802.3af into network connections for power devices such as IP phones and WLAN access points. The 6000G will come in 24- and 48-port versions. Pricing was not available. ■

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Storage networks get help from WAN accelerators

■ BY TIM GREENE

Businesses looking to make consolidated storage networks perform better no longer need to turn to a single-purpose device for help.

Some vendors make single-purpose devices specifically for speeding up wide area file services (WAFS) such as Tacit's IShared, Cisco's File Engine and more recently FineGround's Velocity-FS gear.

But vendors that have been selling generalized WAN-optimization gear that improves many types of traffic now are tuning them specifically to handle WAFS traffic better.

For example, Peribit, Riverbed and Swan Labs address other types of traffic, as well as file sharing specifically. Expand Networks, whose gear performs a range of WAN optimization, says it has its version of file-sharing-enhancement software in beta tests.

Packeteer says it is on the verge of announcing a new compression algorithm specifically designed to reduce as much as possible the volume of traffic that needs to cross the WAN to transfer a file.

These devices have one thing in common. They intercept traffic flowing between clients and servers across the WAN and use varying methods to improve the response time that end users experience — the goal being to make the interaction as LAN-like as possible.

The products try to improve how Microsoft's Common Internet File System (CIFS) and Network File System for Unix and Linux — both designed for LANs and both very chatty protocols — perform over the WAN, and the results can be dramatic.

Fentress Bradburn Architects of Denver improved the transfer time of certain files from a "painful" 10 minutes down to 10 seconds using Riverbed Steelhead appliances, according to IT manager Mike Rinken.

The devices have knowledge of CIFS that lets them predict the response a server or a client needs and to produce it locally rather than getting it from across the WAN. So for example, a local appliance will return acknowledgments for routine

session creation rather than having the end machines send them.

This is similar to how Peribit's AppFlow works by predicting what response the protocol needs and supplying it locally.

These devices also cache patterns of traffic as it flows across the WAN. The next time one of these patterns appears, these appliances call out the cached version rather than tapping the server for it. The boxes also optimize TCP sessions between themselves to make transfers more efficient.

While WAFS is the hot application that these WAN optimization vendors are addressing now, look for them to home in on others, says Zeus Kerravala, vice president of enterprise networking at The Yankee Group. Riverbed, for instance, says it is working on speeding up Oracle database traffic, and Swan Labs says it is developing acceleration schemes specifically for VoIP and Citrix.

Creating such acceleration techniques for specific applications is the direction these vendors are taking, Kerravala says. "The goal is to improve the performance of applications. They're not looking at traffic generically," he says.

While gear that accelerates only WAFS can be attractive, getting more than just file sharing accelerated also is enticing, says Joel Althoff, IT manager for Cascade Lumber and Manufacturing in Cascade, Iowa. The company uses FineGround's Velocity-FS appliance to speed transfers between its headquarters and five branches, and would like it if it sped up more than just CIFS-based traffic, he says.

Most businesses would prefer to have WAN optimizers that do more than just file transfer, Kerravala says. "There's a lot more than just that coming out of almost every branch office," he says.

These devices also can help save money in several ways, he adds. They can use WAN bandwidth more efficiently and so stave off the need for larger, more expensive links. They also enable server and storage consolidation that cuts capital, as well as operational costs. And they can improve productivity by getting end users the data they need faster. ■

Lancope boosts traffic-inspection capabilities

■ BY DENISE DUBIE

Lancope this week is set to announce an updated version of its flagship product suite that it says can now more deeply inspect application and Cisco router traffic for potential worms, viruses and malicious behavior on internal networks.

The company's StealthWatch suite of traffic analysis appliances have been upgraded to manage more security devices, to process NetFlow data from Cisco routers, and inspect traffic for application-specific policies such as port usage. By monitoring traffic flows and inspecting packets across a network, this type of network-anomaly behavior detection tool from Lancope, Arbor Networks and Q1 Labs attempts to provide an early warning to network and security managers.

Burton Group analyst Trent Henry says Lancope's product provides additional insight into security issues that could have sneaked by

perimeter tools such as firewalls and intrusion-detection systems (IDS) or intrusion-prevention systems (IPS). According to a Forrester Research survey of 190 IT shops, 58% of companies this year will invest in network firewalls, 43% will invest in gateway anti-virus, and 35% will invest in network-based IDS or IPS. The same survey also found IT managers more concerned over internal security problems.

Henry says Lancope and its competitors could gain traction among enterprise network and security managers looking to more quickly lock down internal threats.

"Network-anomaly detection is used to some extent by IDS and

IPS systems for known vulnerabilities, but Lancope goes a bit further by providing visualization across the entire network," he says. "Anomaly-detection tools monitor normal vs. potential bad behavior, but they are also like [security information management] products in that they provide event management and correlation to other systems to more quickly pinpoint the problem."

Lancope packages its StealthWatch 5 software on appliances that are distributed across a network, near a core switch or data center router. Upon installation, it performs a benchmark of normal traffic behavior and continuously monitors for changes. The product does not sit in line of network traffic, but passively monitors conversations between hosts and clients. Administrators can tap into the appliances via a Web-based interface or use the management console to configure, monitor and generate reports from multiple distributed appliances.

If a relatively unused host begins to propagate many requests, it could be falling victim to a worm. Or if enterprise application traffic deemed content-sensitive starts to use Port 80, the port left open on firewalls for Internet traffic, compliance policies could be in the process of being breached.

According to Lancope, StealthWatch can be configured to alert IT security staff to abnormal network traffic and provide an audit trail to the origin of the problem. The product can determine which server was the first host infected with a virus by analyzing traffic between servers. With that information, IT managers can determine the vulnerability on the server and lock it down.

Lancope's StealthWatch 5 is expected to ship in June. Pricing for a stand-alone appliance starts at \$10,000 and scales up to \$500,000 for a typical deployment. ■

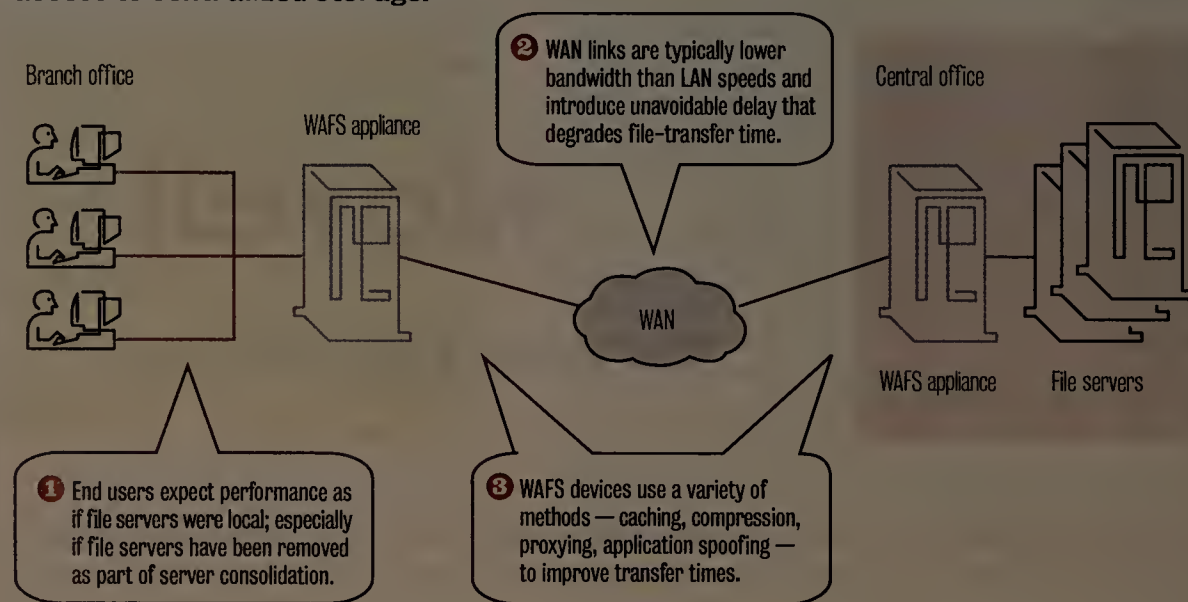
The worms crawl in

According to a survey of 190 IT shops, internal security concerns will top IT managers' worries in 2005. Sixty-eight percent of respondents consider viruses and worms among the top three threats to their network.

SOURCE: FORRESTER RESEARCH

Remote access to storage

Wide area file services (WAFS) try to overcome factors that can slow down remote access to centralized storage.



AMD brings dual-core Opteron to data center

■ BY JENNIFER MEARS

The move to put more processing punch into low-cost, standards-based systems has kicked into high gear with HP, IBM and Sun announcing that systems built on dual-core Opteron processors will ship over the next two months.

The announcements came at an event last week at which AMD celebrated the second anniversary of its popular 32-/64-bit chip with the unveiling of a new design that puts two processing engines, or cores, on one piece of silicon. AMD and Intel last year announced that they were transitioning to a multicore design as a way to get around heat and power issues that come with faster-processing chips.

Instead of increasing clock speed, two lower-power cores that can share processing tasks are placed on one chip. The idea isn't new: IBM's Power chip has been dual-core since 2001, and Sun and HP last year rolled out dual-core RISC processors. What's new is bringing this type of technology enhancement to x86-based systems.

Intel last week began shipping its first dual-core processor, the 3.2-GHz Pentium Extreme Edition for desktops. However, dual-core Xeons aren't expected to ship until early in 2006.

That leaves customers with one choice when it comes to dual-core x86-based servers — for now. Analysts note that while most data center applications are multithreaded, and as a result will see performance improvements on the dual-core boxes, there is no rush to bring in the systems.

Issues remain. Software licensing, for example, is still up in the air, with some vendors, such as Oracle, counting each core on a multicore processor as a CPU and others, such as Microsoft, charging by



The BL45 is HP's first four-processor Opteron blade, giving customers eight processing engines, thanks to its dual-core design.

the socket. IBM last week said it would regard dual-core x86 processors as single CPUs when pricing software. It charges per core for its dual-core Power platforms.

"With first-generation x86 dual core ... the performance bumps will be incremental at first, so we are pricing them as if they were a single processor," an IBM spokesman says.

"It's not going to be ideal for everything, and certainly single-core chips are going to continue to be available," says Gordon Haff, an analyst at Illuminata. "For workloads that are multithreaded, a dual core is going to give more performance. Whether it gives more bang for the buck — customers are going to have to do benchmarks. They're going to

have to look at pricing. Pricing that has been reported for these chips does indicate that there is going to be somewhat of a price premium associated with this."

HP and Sun are the only vendors with a broad Opteron-based portfolio, which also puts a limitation on how widely the dual-core Opterons will be adopted, notes John Enck, vice president of server strategies at Gartner.

Kevin Kish, technical team lead at Spartech, a plastics manufacturer in St. Louis, is looking at Sun's Opteron-based v20z and v40z for test and development environments. He says he could save thousands of dollars by moving an Oracle test and development environment off a more expensive SPARC-based box.

"Dual core will allow us to run more systems on a server," he says. "On the [Sun Fire] E6900 we have four installs of Oracle 11i on one four-processor board. That's a lot of stuff going on."

With dual-core Opteron-based servers he could get the horsepower he needs in a denser form factor compared with current single-core systems, Kish says. ■

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IBM overhauls MQ messaging package

■ BY JOHN COX

With an eye toward making it easier for companies to adapt corporate applications

into Web services, IBM last week unveiled a new release of its WebSphere MQ message-oriented middleware.

Among 150 changes, the two-year engi-

neering effort for Version 6 ported the user interface to the Eclipse UI framework, beefed up MQ for Z Series mainframes and improved support and performance for

Web services protocols running over MQ.

Like similar middleware products, MQ creates a reliable store-and-forward messaging system that lets applications be linked together and exchange information. If a server or network connection fails, the message queues retain the messages and resend them when operations are restored. MQ is designed to support very high transaction volumes.

For Version 6, IBM ported the user interface to Eclipse, which is an open source framework that's intended to give all applications using it a common look and feel. That makes it easier for users to work with programs that perform very different tasks. IBM is phasing in Eclipse across a broad swath of its software products.

The new release now also supports FTP, still widely used for enterprise document movements and management. Developers and users keep working with the familiar FTP programming interface, while MQ actually works as the transport layer.

To beef up MQ on the Z series mainframes, IBM increased the size of queues from 1G to 4G bytes, introduced 100M-byte shared queues, which several applications can use at once, and made changes that let the MQ software adjust the size of page sets, buffer pools and logs. This latter change fine-tunes memory use, which makes the software run more efficiently.

Version 6 now can work with various Web Services protocols: Simple Object Access Protocol (SOAP) messages can rely on the underlying MQ transport. The new version also compresses SOAP messages as much as 50%, according to Scott Cosby, IBM's program director for WebSphere Business Integration. SOAP and XML are demanding protocols with regard to bandwidth, and the compression optimizes network throughput.

Finally, IBM has more tightly linked MQ with WebSphere Application Server.

"We have been very pleased with what we've found so far," says Tom Fox, assistant vice president in the IT group at Wachovia, a financial services company in Charlotte, N.C. "Going into the evaluation, we had taken the attitude of this being just another release. What we've found are many new enhancements."

Especially important to Wachovia are the improved manageability via the new user interface and new remote management features; support for 64-bit computers; and the built-in support for SOAP.

Version 6.0 is expected to be available for nearly all supported operating systems on May 31; for the zSeries, June 24. For all platforms except the mainframe, WebSphere MQ is priced at about \$6,000 per processor. For zSeries mainframes, the pricing hinges on what IBM calls "millions of service units" (MSU), which is a measurement tied to the number of computer MIPS of a given mainframe. The starting price is about \$9,500 per month for a medium-sized system of 100 MSUs. ■

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Q&A

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The long road to security

In the wake of the Sept. 11 terrorist attacks, the federal government met with chemical manufacturers and industry trade groups to discuss developing a plan to protect against physical or network-related attacks. This meeting led to the creation of the Chemical Sector Cybersecurity Program, which seeks to unite the highly diverse \$450 billion chemicals industry — an employer of more than 1 million people and producer of more than 70,000 products — with one protective strategy. Christine Adams, IT staff member at Dow Chemical and director of the Chemical Sector Cybersecurity Program, recently talked with Network World Senior Editor Ellen Messmer about the program.

How did this voluntary effort get started?

Dow Chemical was approached by [then Presidential adviser] Richard Clarke at the White House to discuss the government's expectations for cybersecurity. The CIO of Dow and the CIO of DuPont agreed to initiate an organization on behalf of the industry to improve the industry's cybersecurity. We crafted a very high-level strategy in 2002 with help from the Chemical Industry Data Exchange [CIDX], the trade association for e-commerce standards for the chemical industry's supply chain. Some of the same CIOs that formed CIDX also formed the cybersecurity program.

CIDX last December published "Guidance for Addressing Cybersecurity in the Chemical Sector," a 100-page document on planning network security for corporate LANs and databases, as well as factory and supervisory control and data acquisition systems. What's happening with this?

We have the document to offer to industry, and we're telling the chemical companies they need to implement this cybersecurity-management policy. It's based on the international standard ISO 17799, an excellent framework. In 2003, we conducted an extensive assessment based on ISO 17799, with help from IBM, for 14 of our leading chem-

ical companies. The Guidance document involves how to conduct vulnerability assessment in IT and process control systems. We also have the American Chemistry Council's Responsible Care Program for safe handling of chemical products, which was invented after [Sept. 11].

The Guidance doesn't seem to be a mandate that the chemical companies have to follow.

It's deliberately not a prescription because all the companies have different IT infrastructures.

So what's expected going forward?

Trading of chemicals is now done a lot through e-marketplaces. Our focus is taking all the excellent work that CIDX has done and working with each of the trading associations to produce cybersecurity programs for their members.

What have been the biggest obstacles?

One is information sharing. It's a cultural change for our industry to share a lot of detailed information. We never saw until now a need to share this kind of information. But we're not unique to other sectors — we all use similar products, enterprise systems, desktop computing. We're mostly getting hit with the same thing. The large companies contract with suppliers to watch for these attacks and help patch our systems. This year we're doing a study

on the most effective ways to share information with ourselves and the government. We've not yet come to a clear conclusion.

What's the relationship with the Chemical Sector Cybersecurity Program and the Chemical Industry Information Sharing & Analysis Center? [Chem-ISAC was formed in 2002 by the Chemical Transportation Emergency Center and the National Infrastructure Protection Center, which became part of the Department of Homeland Security.]

We're working closely with the team of people in the chemical sector ISAC. We're also working with the DHS. For one thing, we're working on the piloted Homeland Security Information Network. It's a secure network used for discussion, similar to what we have in the ISAC. We're focusing first on the physical world and anything that looks suspicious. We're working with government to define potential types of attacks as an individual sector and as a coordinated sector, and what we need to be doing in our sectors. There can be different impacts of a cyberattack — danger to people, public health or a significant economic impact. Some people feel terrorists are just as happy destroying the economy as destroying people.

How would a cyberattack affect the chemical industry?

Short of a massive telecommunication outage, it would be difficult to have a catastrophe across the chemical industry because we aren't connected in the way that the electric power industry might be. But there could be major interruptions to customers.

There's a trend in the process-control system environment where we used to use proprietary software, but we've begun replacing that with third-party off-the-shelf software, including open systems platforms. We're introducing a whole new set of vulnerabilities to the process-control world. ■

Microsoft

continued from page 9

deeper directory integration and support for SDM.

Later this year, Microsoft plans to release Visual Studio 2005, which will provide developers with the ability to build SDM-based management models into their applications. Those models, which are embedded in applications, are XML documents that outline parameters such as how the application should be configured and what security policies are associated with its operation.

The applications eventually will be able to feed that information to the SDM-enabled versions of SMS and MOM, as well as other management tools, which will manage those applications within those SDM parameters.

Microsoft plans to "SDM-enable" all of its infrastructure software, including the Longhorn operating system, so that the SDM-based management models can be used to repair, troubleshoot and report on network health.

Microsoft says it hopes its development and support of WS-Management, an emerging Web services protocol, will help extend SDM and management over many platforms.

The linchpin is that the protocol will have to garner widespread adoption for that to become a reality.

But for now, observers say Microsoft is making headway. "Microsoft has solidified the role of SMS and MOM in their management road map, and the DSI strategy is now clearer with the model definition," says David Friedlander, an analyst with Forrester Research. But Friedlander says Microsoft has some gaps to fill, such as service-level management and asset management, and must adapt to managing business processes in addition to systems and applications. ■

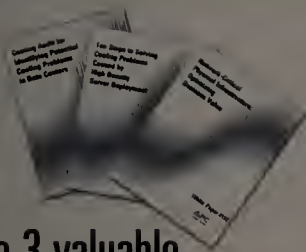
Getting personal

Christine Adams

- Organization:** Dow Chemical
- Title:** Director of Chemical Sector Cybersecurity Program, an industry organization formed by CIOs from Chemical, Eastman Chemical Company, DuPont de Nemours & Co., Celanese and Rohm & Hass.
- Job history:** Joined Dow Chemical in 1975 in business information systems in its Louisiana division; in 1977 became IS manager for Dow's global Emulsion Polymers business.
- Cybersecurity Program staff:** The program uses the staff of the American Chemistry Council for administrative operations and legal counsel, and members of the CIO Executive Board dedicate some of their employees to the program on a volunteer basis to provide subject matter expertise and leadership on key initiatives.
- Background:** Born in White Castle, La., a sugarcane farming community with a population of less than 1,000 people. She received her undergraduate degree from Nicholls State University in Thibodaux, also known as the "Harvard of the Bayou."
- Fun facts:** Thirty years ago, she was selected as the Louisiana State Sugar Queen. She prefaces this with "I was very young, and the contest didn't involve a swimsuit competition."



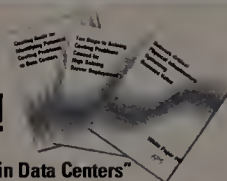
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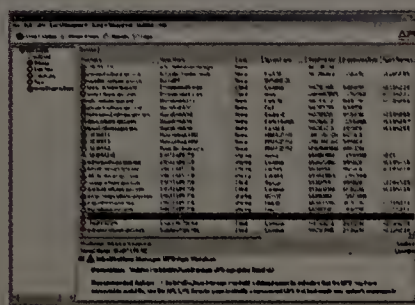
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Forum Systems targets viruses in XML messages

■ BY JOHN FONTANA

XML security vendor Forum Systems next week is scheduled to release anti-virus

capabilities for its XML firewall that will let users block viruses that could be embedded within XML messages.

Version 5.0 of XWall, the company's Web

services firewall, will open XML messages and documents and run an anti-virus scanning engine against the contents. The company has licensed the eTrust anti-virus

engine from Computer Associates.

The focus is to prevent common viruses from infecting machine-to-machine communications that users rely on as part of Web services deployments or service-oriented architectures. Forum's XWall already protects against XML-based viruses and attacks.

Traditional firewalls can't protect against viruses embedded in messages because they filter packets and are not designed to open and inspect XML messages.

While Forum says the problem of typical IP-based viruses being injected into XML messages is uncommon today, experts say that XML firewalls might become the top-level perimeter network defense.

"Right now this is new and interesting, but at some point these [XML] systems turn into the foundation for your perimeter defense," says Pete Lindstrom, an analyst with Spire Research. "Four or five years from now, the roles are reversed and the XML firewall becomes the foundation that

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According to Gartner, by 2008
at least

of companies exposing Web
services to the Internet will
experience some downtime in
business-critical functions
because of self-replicating
attacks.


everything else plugs into."

As more applications start using XML, the issues surrounding viruses will rise. Common applications such as Microsoft Word and Excel let users save files in an XML format. "If we are sharing files in some way, viruses will be attached," Lindstrom says.

If they are attached to Simple Object Access Protocol (SOAP) messages, Forum says it will catch them. The Forum XML Anti-virus module for XWall 5.0 is designed to find all attachments to SOAP messages and unlock binary data encoded with Multipurpose Internet Message Encapsulation or Direct Internet Message Encapsulation. The module also supports SSL and XML encryption so it can decrypt messages before passing them to the anti-virus engine.

The anti-virus engine can receive virus signature updates from CA's eTrust Security Advisor. Forum also offers a service called Vulnerability Containment, an online service to automatically configure XML intrusion-prevention policies, and deliver vulnerability alerts and software upgrades.

Forum is expected to ship XWall 5.0 with the anti-virus module on May 1. XWall is available in a hardware appliance or as software that runs on Windows, Linux, Sun Solaris and HP-UX. The firewall costs \$5,000 to \$40,000, depending on software and hardware configuration. ■



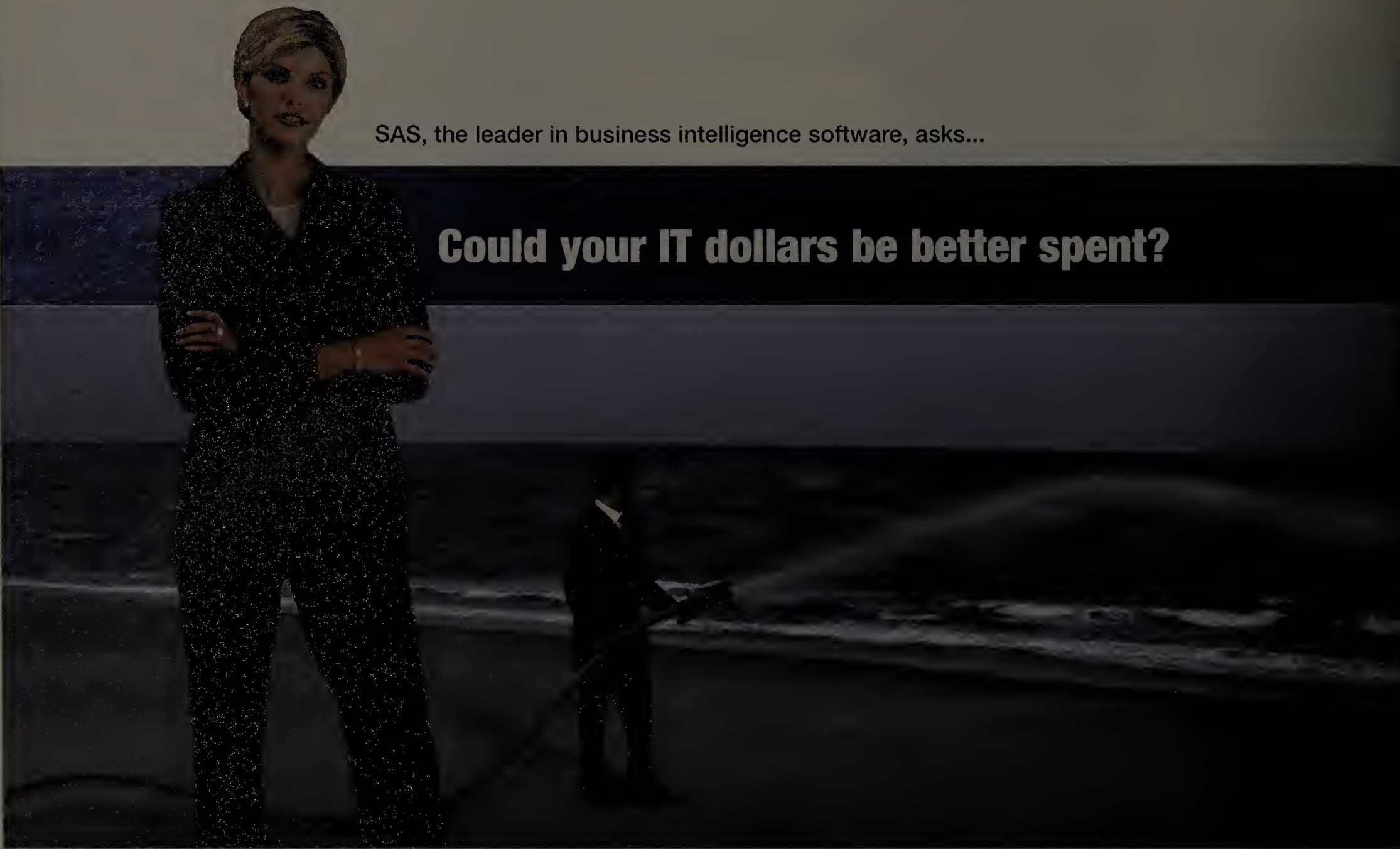
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The spin on Cisco's latest acquisition

Topspin buyout brings company server virtualization, high-speed I/O technology.

■ BY PHIL HOCHMUTH

With its acquisition of Topspin Communications last week, Cisco is leaping deeper into the corporate data center

Short Takes

■ Users of **Microsoft's Live**

Communications Server will be able to access this enterprise instant messaging platform from mobile devices. Microsoft last week said it is developing a client front end to LCS that will go into beta testing in the second half of this year and that will be based on the Windows Mobile operating system. The mobile front end's user interface will be based on LCS' new PC-based client, Microsoft Office Communicator 2005, formerly called Istanbul. The mobile client will be designed to run over a variety of wireless networks and will feature an API for third-party developers. The mobile client will run on Windows Mobile 2003 Second Edition and Windows Mobile 5.0. Three types of devices will be immediately supported: the Pocket PC, Pocket PC Phone Edition and Smartphone.

■ **Attachmate** last week said it was being bought by the investment group that recently purchased rival WRQ, and the two companies plan to merge. Under the deal, Financial Francisco Partners, Golden Gate Capital and Thomas Cressey Equity Partners will acquire Attachmate. Details were not released. Some layoffs are expected, but the company said it was too early to say how many. Attachmate has about 650 employees, while WRQ employs about 300 people. Both companies make software that enables host application connectivity. Upon the transaction closing, Frank Pritt will retire from the company he founded in 1982. Jeff Hawn, chairman of WRQ since January, will become the new CEO of the combined company.

beyond its traditional role as a high-speed Ethernet switch vendor.

The \$250 million buyout of Topspin gives Cisco a range of high-speed InfiniBand data center switching gear; software for virtualizing servers into utility or grid computing resources; and specialized, high-speed I/O technology for shunting network traffic directly into server memory. But what some industry observers note about the move is Cisco's expansion into areas that might be getting away from the vendor's core competency: Ethernet/IP switching and routing.

Others say the move could create tension with key Cisco partners in the large enterprise market, such as IBM and HP, as computing and network vendors both pull more network intelligence into their respective realms of influence.

Topspin's switches are deployed in data centers and attach directly to servers through high-speed InfiniBand connections. This technology gives servers very fast bus speeds, up to 4G bit/sec, and allow for technologies such as remote direct

Data center push

Cisco's acquisitions over the past few years have been targeted at controlling the data center/storage.

Company	Price	Year	What Cisco paid for
Topspin	\$250 million	2005	Ability to get into the server fabric switch and grid/utility computing markets; ability to add technologies such as iSCSI, InfiniBand and Fibre Channel over IP.
Actona	\$82 million	2004	Technology that extends faster access to centralized file storage and data center applications to remote offices via WAN links.
Andiamo	\$2.5 billion	2002	Its first entry into the market resulted in Cisco's MDS 9000 SAN switch, which combines Fibre Channel switching with IP/Ethernet connectivity.

memory access (RDMA), which streams data directly from the network to server memory, bypassing the server's CPU(s), thus increasing application performance. The Topspin gear combines these technologies with an IP switching backplane,

which connects to Ethernet LAN switches in a data center. The company competed with such vendors as InfiniCon and Voltare, which also are in the InfiniBand switching market.

See Cisco, page 24

Wireless sparks enterprise network innovation at Mobile & Wireless show

■ BY JOHN COX

ORLANDO — Network executives are getting creative with mobile computing. They have to because they're coping with rapidly changing technologies in networks, handheld devices and application development.

Enterprise mobile projects tend to be highly focused, start small and look for concrete payoffs, which could be in hard dollar revenues or savings or in customer satisfaction and employee productivity, according to attendees and speakers at the recent Gartner Mobile & Wireless Summit.

Acuity, a Sheboygan, Wis., insurer is evaluating how to give field claims adjusters wireless access to corporate applications, possibly with a laptop fitted with a cellular network interface card, said Tina Pokrzywinski, director of IS. "We're due for a technology upgrade," she said. "And our CIO said, 'Wireless is coming and we need

to be ready.'"

While some attendees at the Orlando event were focused on the basics of how to deploy secure wireless LAN (WLAN) infrastructures, others were looking beyond the network.

"If you look around, a lot of the people here are IT infrastructure people," said Paul Kurchina, program director for IT at TransAlta, a Calgary, Alberta, power generation company. "But the [wireless] infrastructure is almost boring to me now. The really interesting thing is, 'OK, now that I've got this network, what can I actually do with it?' It's about applications."

End users continue to find new ways to exploit the wireless network, according to attendees.

TransAlta, for example, is deploying WLANs at several generating plants to let field maintenance workers outfitted with Symbol rugged handhelds link with back-end equipment and repair databases,

ordering systems, and a new mobile workflow application. The system has cut the time for many maintenance checks and tasks in half, according to Kurchina.

Almost as soon as the system was deployed workers were suggesting new applications, he said. "They're dreaming up solutions on their own," he said. One idea was to attach a \$5,000 802.11b sensor to an aging machine. The sensor's data lets TransAlta extend the life of the equipment by six months, which created a huge ROI. The company now is rolling out more wireless sensors.

Columbus Children's Hospital in Ohio has hundreds of handheld devices, from smart phones to PalmOS handhelds to Dell laptops. Many of the PalmOS PDAs still synchronize via the user's PC or an Ethernet dock, but more of it is being done wirelessly. Hospital executives now can synchronize scheduling and other data in less than

See Wireless, page 24

Colubris lays out WLAN road map

■ BY JOHN COX

Colubris Networks recently outlined a wireless LAN road map that includes new products to create one network infrastructure that can serve both wired and wireless users.

The goal is to create an access layer Ethernet switch, loaded with Colubris' WLAN software, that will use recently announced switching silicon by vendors such as SiNett or Broadcom to process wired and wireless traffic. By contrast, many enterprise WLANs today use separate WLAN switches to process packets and handle roaming, authentication and management for wireless users.

"The idea of having one network to manage remotely in our stores is a lot more comforting than managing a wired

net with one set of rules and having a separate set of rules for wireless," says Lou Hernandez, hardware network engineer, for Gander Mountain, a St. Paul, Minn., outdoor retailer with 82 stores in 15 states. The company has deployed Colubris' WLAN access points at its headquarters, and is rolling them out in selected stores.

"To this point, we've been doing the overlay model for WLANs," says Craig Mathias, principal with wireless consultancy The Farpoint Group. "Going forward, overlays will fade, and we'll have unified networks, what I used to call 'integrated WLANs.' Wireless and wired users will have the same switches, the same RADIUS databases and so on."

Currently, Colubris offers a line of intelligent WLAN access points, which handle client-oriented functions, and public

access gateways, which are aimed at service providers that want to offer hot spot services and centralize some control functions and billing. Both are managed by the Colubris Network Management System application.

In May or June, Colubris plans to announce details of a new controller specifically designed for corporations. It will incorporate the gateway's public access features, and add new, centrally controlled capabilities including radio frequency management, authentication, roaming, and configuration of the Colubris intelligent access points, which will continue to be plugged into current third-party LAN access switches.

The new controller would make Colubris competitive with centralized architecture from WLAN switch vendors

including Aruba Wireless Networks, and with offerings from some WLAN controller companies such as Bluesocket and Cranite. This new controller is expected to ship later in 2005.

In 2006, Colubris says it plans to introduce the unified LAN/WLAN access switch that enterprise users can deploy instead of standard Ethernet switches in wiring closets, for example, when upgrading LAN switches or in a new building.

Colubris is talking with Taiwanese switch makers and with chip vendors such as SiNett but has made no decisions on its partners in this product ■



Wireless

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Cisco

continued from page 23

The Topspin switches also can be programmed to virtualize server resources, which lets users move processing power of servers to different applications and storage pools to accommodate shifting workloads. (For instance, processing power could be diverted to financial applications at the end of a closing period, and diverted elsewhere at regular times.)

"One of the biggest threats to Cisco before this acquisition was Intel-based clusters that stripped away intelligence from the data and storage networks," says Jon Oltsik, senior analyst with Enterprise Strategy Group. "This move ensures that Cisco will play a role in the server clustering space. Knowing Cisco, it will attract lots of partners and become a center of development activity."

The move to acquire Topspin was foreshadowed in statements made by Cisco CTO and executive vice president Charles Giancarlo at the vendor's analyst conference in December 2004.

"We have an endless opportunity to migrate features from operating systems and applications into the network," Giancarlo said. "This is what will allow servers, computers and networks to scale, the ability to offload processors and make them available to perform other work at a higher level ... [and] create a virtual backplane between networks, storage and pools of processors."

Cisco executives say the integration of Topspin switches into its lineup of Fibre Channel, iSCSI, Gigabit and 10 Gigabit Ethernet technologies for data centers will give customers more ways to lay out data center network blueprints.

"The widespread adoption of server architectures such as blades, grid computing and clustered applications is driving an emerging market opportunity within the data center," said Luca Cafiero, senior vice president of Cisco's Data Center, Switching and Wireless Technology Group, in a statement. "Topspin's server fabric switches and virtualization software [gives] customers compelling end-to-end data center switching capabilities."

Another analyst sees a potential battle emerging, where Cisco and IT vendors, such as Dell, HP, IBM, and Sun, play tug-of-war over where network intelligence should reside — either in network gear, such

as switches and routers, or in clusters of servers and blade chassis.

"The idea of reducing servers to just something with RDMA pipes is something Cisco seems interested in doing," says Frank Dzubeck, president of Communications Network Architects, an IT consultancy.

Dzubeck says Cisco's version of virtual data centers and utility computing would make servers into "dumb" boxes running processes and storing data, while the intelligence of how processors, storage and other services are utilized, managed and made available would reside in switches and routers.

Its strategy "is to reduce [servers] to dumb machines that just execute instructions and fetch

“Cisco's approach seems to be more along the lines of, 'we control the flow and the information, and [IT vendor products] just execute.'”

Frank Dzubeck

President, Communications Network Architects

data from storage," he says. "IBM doesn't believe that and neither does HP. Their mentality is that it all plays together — storage, networking and computing — as a seamless entity. Cisco's approach seems to be more along the lines of, 'we control the flow and the information, and [IT vendor products] just execute.'" But, he adds, "ultimately, it's not networking that control the direction of computing intelligence, it's IT companies."

To this point, Cisco says potential rivalry with key enterprise partners is a non-issue.

Partners such as IBM, Dell and HP currently resell Topspin switches along with their respective data center server platforms, says Jackie Ross, vice president of marketing for Cisco's Storage Technology Group. Also, while the Topspin acquisition gives Cisco a new product category, in the host bus adapters that go into servers and interoperate with the switches, Ross adds, "I don't think we will be in the HBA market for the long run." ■

Wireless

continued from page 23

60 seconds via Samsung and Treo handhelds over Verizon's 1X cellular network, said Schon Crouse, a PC support analyst with the hospital's IS group.

Exploiting the hospital's Cisco WLAN, emergency room nurses now take preliminary patient data using a wireless laptop mounted on a cart that's wheeled from one triage room to another. Data is collected faster, more accurately, and is available immediately. Crouse said the time it takes to triage a patient has been cut in half.

Westar Energy, a utility in Wichita, Kan., runs a mobile workforce management application over a 2400-baud radio system from Motorola to Panasonic ToughBook laptops mounted in trucks. The software has made job scheduling, dispatching and reporting faster, although the radio link itself is a far cry from broadband capacity.

"We don't transmit a lot of data," said Sam Funk, technical coordinator for mobile data. WLAN access points are being added to regional sites where the workers are deployed. The WLANs let the trucks download big files such as maps or photos and lets network administrators manage the laptops.

Westar also is talking with the city of Wichita about partnering on a wireless broadband network, to be based on 802.16 WiMAX radios due out later this year. The city wants to build the network for its public safety departments. "We'd have broadband coverage at least in the metro area," Funk said.

Another company, Northrop Grumman, has used WLAN bridging technology for a kind of slow-motion mobility at three shipyards.

Ships are built in modular sections that move in stages through the shipyards. A variety of portable buildings, from 200-person offices to small tool supply rooms, have to move with them, said J.D. Longmire, sector manager for networks and telecommunications, Northrop Grumman Ship Systems in Pascagoula, Miss.

In late 2004, the company eliminated the costs and delays of constantly re-laying Ethernet and power cables by using a point-to-multipoint wireless link, created by pairs of the Cisco Aironet 1300 Access Point/Bridge. The bridges link the shipyard's wired LAN with small LANs in 15 moveable buildings. The bridging unit on each building is wired to an Ethernet switch that supports PCs and Cisco's VoIP desk phones.

The wireless bridges are being rolled out as part of what the ship systems group calls the comprehensive wireless saturation plan, Longmire said. "The basic concept is to provide a complete wireless and VoIP infrastructure that will allow data/voice connectivity where it is required, including aboard the ships," he said.

The infrastructure will underlay a growing portfolio of applications and systems: bar code readers, remote data entry, telemetry systems for power, pressure and temperature monitoring, and supplanting wired applications and systems such as timekeeping and dumb terminals. ■

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TOLLY ON
TECHNOLOGYKevin
Tolly

Low-tech, high-tech crime — and stopping it

I recently read a "real-world" incident that provides a useful case study of what to do — and what not to do in securing data.

The *Jerusalem Post* ran a story about a

victim of a security breach, which was an Israeli bank. Given the importance of security to banks in general and the overarching importance of security in Israel, it was a surprise to say the least.

It seems that someone had broken into a bank one night and wasn't caught. Officials, at the time, were relieved to find out that nothing was missing.

What they didn't think to consider was that the purpose of the break-in was not to take something out — but to put something in.

The burglar cleverly sought out a wiring closet and installed a simple wireless LAN (WLAN) access point. Pretty low tech for a high-tech crime.

With the access point in place, our "entrepreneur" was now literally "plugged in" to the bank. He was able, apparently, to get on the network — and, the bank didn't notice.

This burglar was brazen, with the range of the wireless signal limited, he'd to do his hacking nearby. So he dreamed up a phony business and rented office space close enough to reach his access point.

He broke into the system and transferred money to accomplices, got a bit too bold, got caught and now is behind bars.

But why did this happen at all when there are so many ways to prevent such incursions?

Since we know he broke into the system and no "insiders" were mentioned, he must have broken a password. If the bank still used some type of shared (hub) technology, he could do that just by monitoring the network. Or maybe the bank didn't insist on strong passwords and he ran a dictionary attack until he got in.

Even with that, though, if the bank had implemented a basic two-factor authentication — SmartCard — a cracked password would have done him no good.

By now, any WLAN providers reading this have already mumbled "rogue access point detection" to themselves. Of course, that would have saved the day. Most enterprise-class WLAN implementations have such a facility to detect and even deactivate unauthorized access points.

Given that many banks might be afraid of perceived security problems inherent with wireless, the rogue access point might have been the only access point in the bank. Because they didn't use wireless — or didn't think that they did — they would likely have had no rogue detection scheme in place.

Still, there was an easy way to keep him out — 802.1 port-level authentication. Even low-end switches these days support the 802.1X protocol to authorize basic port-level network access. That means before the switch lets you on the network you must pass a challenge-response sequence to prove you have the authorization. Clearly, no such mechanism was in place.

The moral is the flexibility of wireless is a double-edged sword and the ease with which your system can be compromised is greater than ever before. So prepare.

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.

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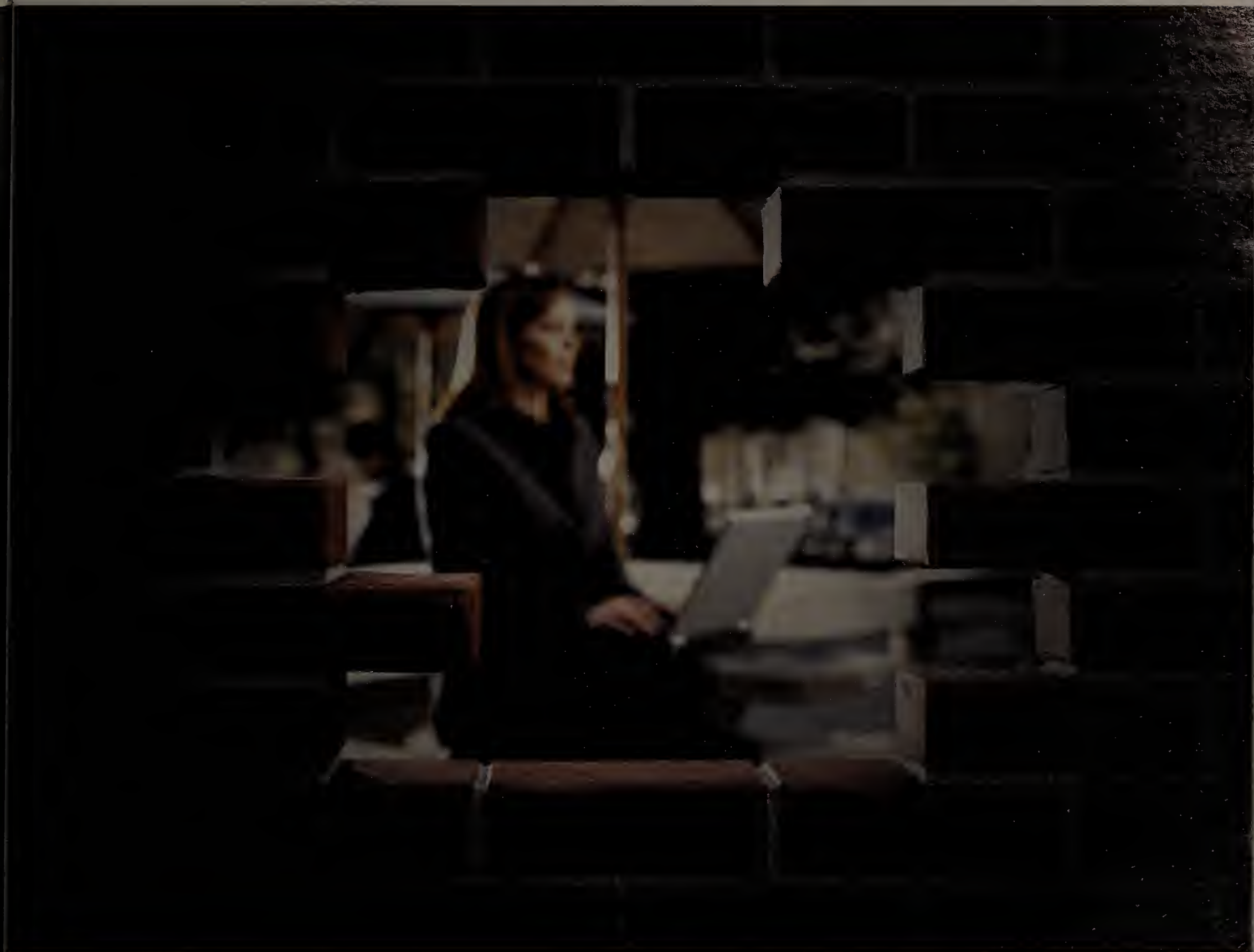
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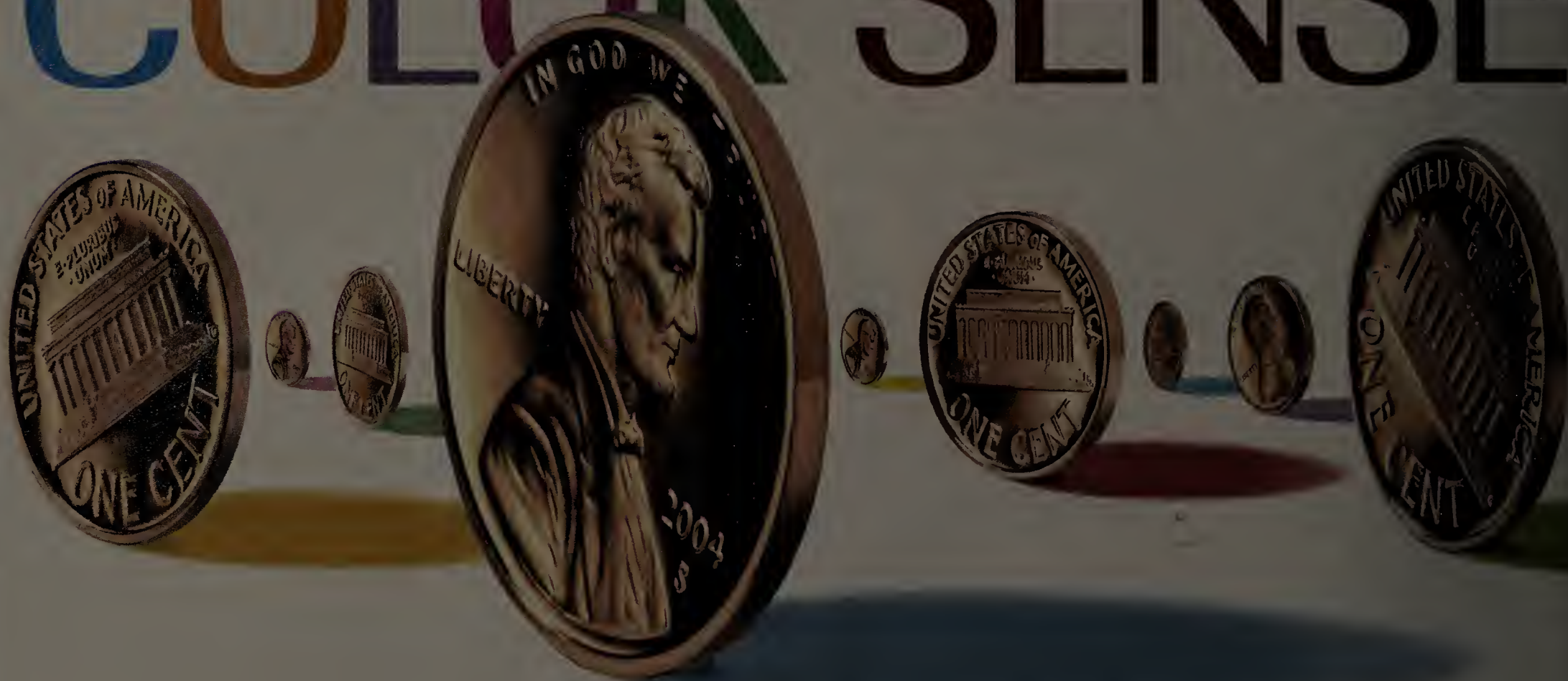


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EMC launches new high-end NAS gateway file system

■ BY DENI CONNOR

EMC last week rolled out a file system and network-attached storage gateway that lets customers consolidate NAS environments and manage that data from a single, unified point.

The Virtual Filesystem, which works with any EMC NAS device that uses the DART operating system, congregates individual NAS file systems under one management view for faster access. The Celerra NSX is a NAS box that attaches to EMC Symmetrix or Clariion storage and makes them available to users via the Ethernet network as file information rather than block-based storage-area network data.

Mack Kigada, a system engineer for Providence Health System, has a DART-based EMC Celerra CNS connected to an older EMC Symmetrix that he will retire when the new Celerra NSX arrives. He says he plans to migrate to the EMC Celerra NSX and use the Virtual Filesystem to better manage his data.

See EMC, page 32

Short Takes

■ Server virtualization specialist **SWsoft** is expanding its support for 64-bit environments, saying that users soon will be able to use its product on x86-based 64-bit platforms. Last week, the company announced that its Virtuozzo virtualization software would support 32-/64-bit chips from Intel and Advanced Micro Devices. SWsoft has supported 64-bit Itanium environments since 2003. Virtuozzo virtualizes servers at the operating system level and supports Windows and Linux. SWsoft competitor VMware announced support for 64-bit environments last April and delivered experimental support for GSX server in June. VMware Workstation 5, which began shipping earlier this month, supports 64-bit environments.

Persistence in pioneering a laptop

Principals tell how Toshiba's T1100 became first IBM-compatible and incited a revolution.

■ BY MARTYN WILLIAMS

Twenty years ago this month, Toshiba offered for sale the T1100, the world's first IBM-compatible laptop computer. The machine sparked a laptop industry that will sell 195 million units this year.

But the T1100 almost didn't happen.

Executives in Tokyo were skeptical of Toshiba's ability to successfully launch the machine, and a lack of software led one of the project's leaders to repeatedly visit a major software vendor until they agreed to release necessary applications.

Portable computing wasn't new in 1985. A series of machines from companies such as Osborne, Radio Shack and Epson had been on the market, but the T1100 was the first that included a basic feature set that would become the standard for portable computers for the next 20 years: It ran off internal rechargeable batteries, had an LCD screen, a 3.5-inch floppy disk drive and, perhaps most importantly, was compatible with the IBM PC.

Toshiba already knew the importance of such compatibility. Its entry into the U.S. desktop PC market a few years earlier ended in failure because its machine lacked IBM compatibility.

In the wake of this failure, three Toshiba employees went to Los Angeles in 1983 for two months to plan the company's re-entry into the U.S. computer market. The trio worked with McKinsey & Company on the project, called "Brighter Blue," and concluded that a new desktop PC was not the way to go.

"Transportable computers were becoming popular but they were very, very, very big," says Atsutoshi Nishida, who led the project and is now an executive vice president at Toshiba (he will become president in June). "Our plan was for a clamshell-type transportable PC with an LCD and IBM compatibility."

The team returned to Tokyo but was met with skepticism. Senior management didn't believe that the market would accept such a computer under the Toshiba brand. Nishida offered the machine to other companies for them to sell, on an OEM basis, and they all declined.

The rejections didn't dent Nishida's confidence, and he persisted in pushing the idea. He finally got approval, but only after promising he could sell 10,000 in a year.

"Back then it was a very large quantity," he says.



From its uncertain beginnings 20 years ago, Toshiba's T1100 laptop thrust portable computers into the mainstream, thanks in large part to its IBM compatibility.

Despite approval, management wouldn't provide any cash for development. Toshiba's PC division couldn't afford to finance the project, so Nishida committed funds from his international sales and marketing budget, recalls Nobuyuki Tanaka, one of the original engineers and today a senior vice president at Toshiba.

Prior to commercialization, the project faced another hurdle. Toshiba's desktop PC experience revealed that no one would buy a PC without software. While the T1100 was to be IBM-compatible, it was based on 3.5-inch floppy disks. At that time the industry was standardized around 5.25-inch

disks, and there was no software available on the smaller versions.

"With no software it could run, our product would be just a box," Nishida says.

Nishida's first call was to Lotus Development (now a unit of IBM). A request to the European sales manager for a version of Lotus 1-2-3 on the new floppy disk was refused. A second visit resulted in refusal again, as did a third visit. Undeterred, Nishida visited the offices for a fourth time.

"By my fourth visit he was fed up with my persistence in the face of refusal," Nishida says. "He told me he would talk to an engi-

See Laptop, page 32

EMC

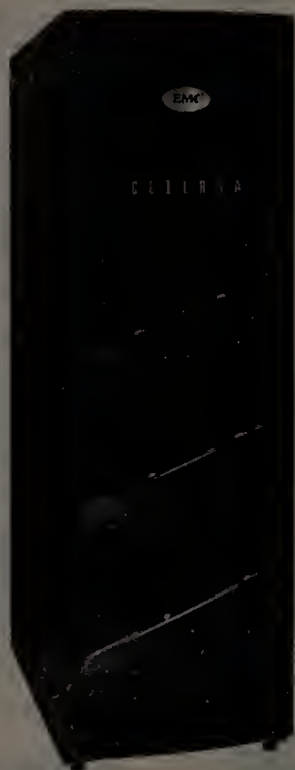
continued from page 31

"The new virtual file system will allow me to have better granular control of the file shares," Kigada says. "I can now nest file systems so that I only grow the pieces that need to grow. Users that are on the same tree but on a different file system will not see the available free space."

The file system also will let Kigada set capacity quotas for users or groups in more detail. It can address files of 16T bytes, which is its maximum capacity.

Kigada also likes its support of iSCSI. He has a growing server farm that uses VMware's virtualization software to consolidate applications. Kigada will be able to use the EMC Celerra File Mover technology to migrate unused files to separate file systems he will create.

The Celerra NSX has four to eight clustered blades for a useable capacity of 48T to



EMC's new Celerra NSX is the company's top-of-the-line NAS gateway.

112T bytes. It has dual management stations, dual connectivity to the network and two UPSs for redundancy and high availability.

The Celerra NSX performs 45,000 Network File System (NFS) I/Os per blade, which total more than 300,000 I/Os per second, EMC says. It supports NFS and Common Internet File System.

EMC also enhanced its Celerra management software with volume management that lets users create system configurations based on workloads. EMC also announced Centerra FileArchiver for its content-addressable storage array. CFA integrates the Celerra FileMover application to let customers create policies that migrate data from the Celerra to the

Centerra for information life-cycle management purposes.

The Celerra NSX costs from \$275,000 to \$500,000 depending on storage capacity. ■

Laptop

continued from page 31

neer as a personal favor, not anything official....The man migrated Lotus 1-2-3 to 3.5-inch floppy disks. It worked perfectly."

His next call was on Ashton-Tate, a Lotus competitor and maker of the dBase II software. This time agreement came a lot faster and was helped when Nishida mentioned Lotus 1-2-3 was being migrated. Lotus later agreed to make a version of Symphony, although it required two floppies and so had to wait until Toshiba released a subsequent laptop with dual drives.

Software compatibility made up a large part of the development work, says Haruhiko Banno, the engineer who accompanied Nishida to Los Angeles in 1983 and today serves as president and CEO of Toshiba Digital Media Engineering.

It was still an age when IBM-compatibility didn't always carry an assurance that all software would work.

The T1100 was launched in Europe at the Hanover Messe trade fair in April 1985.

It was based on an Intel 80C88 processor, had 256K bytes of memory as standard, which could be doubled, a 640-by-200 pixel reflective LCD that could display 25

lines of 80 characters and a 3.5-inch floppy disk drive that supported both the 640K- and 720K-byte floppy standards. It measured 31.1-by-6.6-by-30.5 centimeters and weighed nine pounds. The computer was based on an IBM-compatible operating system developed by Toshiba.

It cost 6,480 German marks, which was \$2,090 using the exchange rate of the time.

Nishida spent the summer visiting major European companies to promote the machine. Early sales gave Nishida the ammunition he needed to drive further deals because, just like with the software companies, he could use T1100 purchases by competitors to tip the scales in his favor.

"A year later, I had sold almost 10,000 units," he says. "In fact, I was 230 units short but I sold those soon after. I kept my promise."

In late 1985, the computer made its first appearance in the U.S. at the Comdex show and went on sale soon after in early 1986. It was beefed up with a faster processor, more memory and a better screen in 1986 to better compete with IBM, which had launched its PC Convertible.

Williams is a correspondent with the IDG News Service.

Critics Rave... Companies Switch!

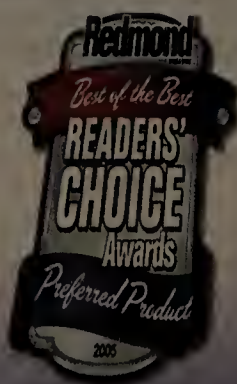
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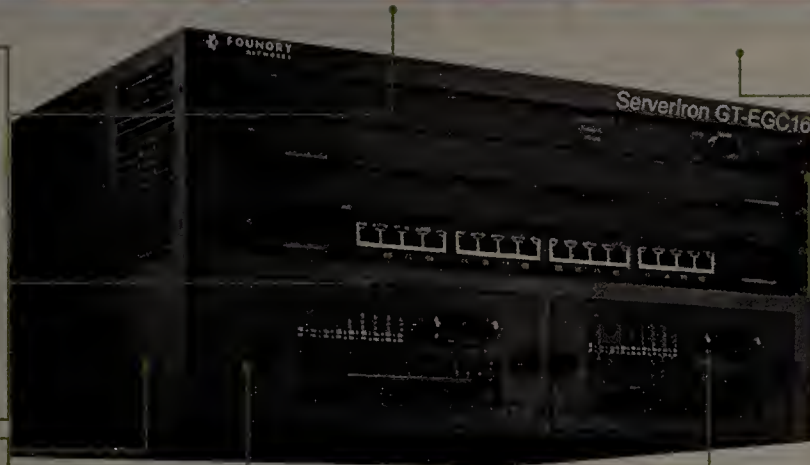


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1. Do nothing. The house gets dirtier and dirtier, stuff starts to pile up, the smell gets worse and neighbors start calling the health department. Eventually the house gets so dirty that it's uninhabitable, so you move out and find another place to live. (This scenario is similar to never defragmenting.)
2. Clean it yourself. This usually requires carving at least an hour or so per day out of your free time. (This scenario is like defragmenting your systems with a manual defragmenter.)
3. Hire a housecleaning service to come in and clean on a regular basis. (Automatic defragmentation.)

Do it yourself?

#2 seems like a reasonable solution. After all, plenty of people clean their own houses, right? In theory, yes. In reality, things come up—weekend plans, long work hours, etc. You might only have a few minutes to straighten up, or you might skip a couple of day's worth of cleaning altogether. End result: the house is rarely as clean as it could be, and when you do clean, it takes much longer than it should. Likewise, the process of manual

defragmentation takes so long and involves so much IT staff time that it rarely gets done.

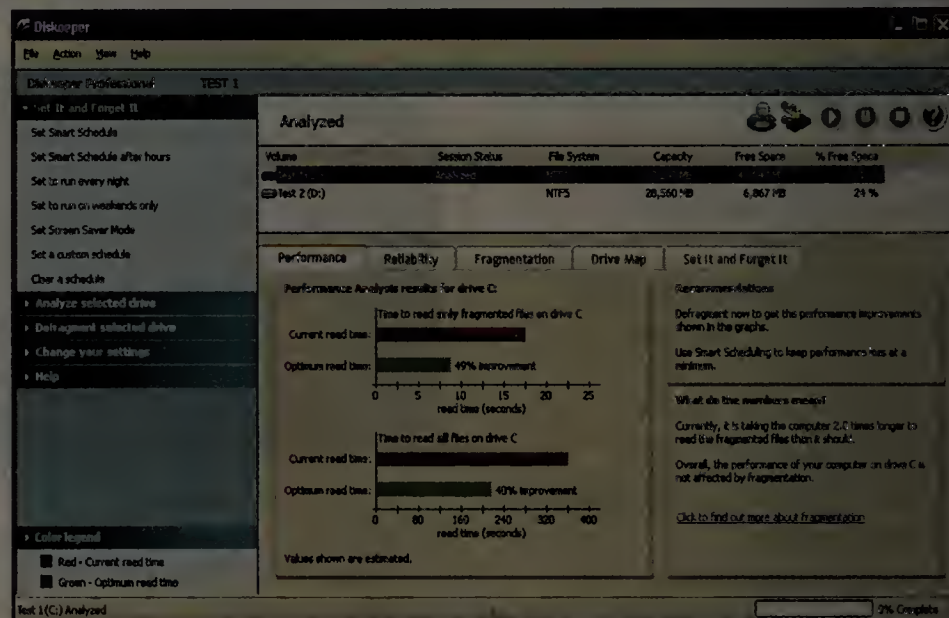
The most effective way to keep your house clean is to have it done automatically, on a regular basis. And the most effective way to keep your systems running at top speed with maximum reliability is to have them defragmented automatically.

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Let's say you hire a cleaning service to come to your house once a week and scrub the daylight out of it. They vacuum carpets, clean windows, polish furniture, organize the attic, etc., etc. It takes them all day and well into the evening. And while you like having a clean house, it's annoying to have to wait to eat dinner because someone is polishing the chrome on your oven door. Or to have to park on the street because someone was midway through straightening up the garage just as you got home from work. The same is true of defragmentation. A defragmentation run that kicks off at the wrong time can turn into a major headache and seriously disrupt your organization's workflow.

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chores, like polishing the chrome in the kitchen or cleaning the garage, are done at times when they won't inconvenience you. And if they do happen to be cleaning a room you need to use, they get out of your way immediately.

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Short Takes

■ **MySQL AB** has released a beta version of a tool for customers migrating from competing products to its own open source database. Announced last week, the **MySQL Migration Suite** targets migrating from Oracle's database and Microsoft's Access. Future versions will support Microsoft SQL Server, IBM's DB2, and Informix and Sybase databases. MySQL often says its database complements, rather than competes with, databases from major vendors, but the migration tool suggests otherwise. Availability of the beta was announced at the company's user conference, where MySQL also was highlighted as an upgrade to the company's database aimed at corporate users. Called MySQL 5.0, the new database is scheduled for release by the end of the second quarter. MySQL AB also announced a discount on its migration consulting services. Until June 30, customers can get five days of consulting for \$8,500, during which a consultant will help plan and begin a database migration. The regular price is \$10,000. The beta migration tool can be downloaded free at www.mysql.com/products/migration-suite.

■ **ScriptLogic** last week unveiled the latest version of its **Desktop Authority** software and two add-on modules that the company says will help users of its Desktop Authority 6.5 detect spyware and distribute patches. The software modules run on top of ScriptLogic's Desktop Authority platform, which includes a central server and agents distributed on managed machines. Desktop Authority 6.5 lets customers scan desktops for spyware at logon or logoff. With the Spyware Removal module, the software can remove or quarantine spyware. If customers install the patch distribution and deployment module, Desktop Authority 6.5 can distribute patches to vulnerable machines. The add-on software modules cost \$7 each for up to 1,000 users. Desktop Authority 6.5 costs \$18 per seat. A free 30-day trial of all ScriptLogic software is available at www.scriptlogic.com.

HP's software group feels heat

■ BY DENISE DUBIE

For HP's OpenView software division, it's time to put up or shut up.

The company has spent millions of dollars on acquisitions in the past year and continues to lose money — \$40 million in the first quarter to be exact.

But that's about to change, according to HP OpenView executives, who say the management software division will build on its core strengths in network and systems management, exploit its first-place market share ranking, and start selling bundled wares to deliver on IT service management rather than doling out single management products.

"HP has endorsed OpenView management as a key strategic area for the entire company and has allowed us to invest in six different software companies," says Todd DeLaughter, vice president and general manager of the Management Software Organization at HP. "We have spent the last year integrating those technologies, and this year HP is calling on the OpenView portion for growth in the software division."

With executive management changes (CEO Carly Fiorina was removed in February and has since been replaced with former NCR chief Mark Hurd) and talk of business units potentially being spun out at HP, the software group needs to establish itself as a key division within the company.

HP also sells the server, storage, network switch and consumer products. OpenView could help HP achieve its lofty goal of delivering intelligent data center hardware and software to enterprise IT customers.

Industry watchers say that to beat IBM, HP must more deeply entrench and integrate its OpenView software across other products. For example, IBM delivers product bundles that incorporate bits and pieces across its brands, including its management software group, Tivoli.

"Tivoli has clearly become Big Blue in every essence of the word. And that is not a bad thing if you think of the resources it can now leverage across the entire company," says Stephen Elliot, a senior analyst with IDC. "I see OpenView as a business unit on the cusp of being able to do that, to become entrenched across multiple products and really essential to HP customers."

OpenView management software, which IDC says in 2003 led the distributed performance and availability market with

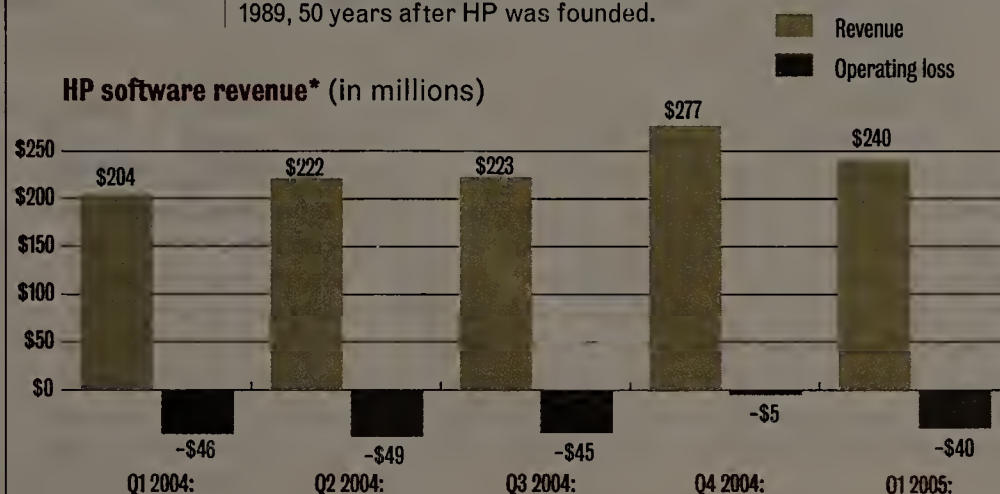
See HP, page 36

PROFILE: HP OPENVIEW MANAGEMENT SOFTWARE

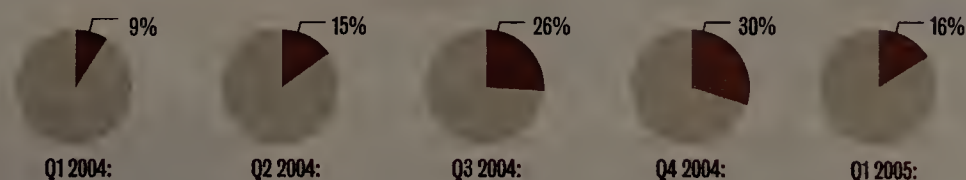
What it does: OpenView software addresses network, system, storage, application and service management. Built on a network management foundation, OpenView has been expanded to include service management applications, identity management products and business-process monitoring tools.

History: The first OpenView product, Network Node Manager, dates back to 1989, 50 years after HP was founded.

HP software revenue* (in millions)



OpenView year-over-year revenue increase:



*INCLUDES BOTH OPENVIEW AND OPENCALL CARRIER NETWORK SOFTWARE

Oracle execs talk up application plans

■ BY STACY COWLEY

Two top Oracle executives last week met with analysts and customers in New York as part of an Oracle road show aimed at reassuring those nervous about Oracle's recent buying spree and its plans for a merged applications set, dubbed Fusion, incorporating its purchases.

"I know you're all wondering: is there some strategy behind all this bizarre behavior over the last six months, us buying all these companies, or is it just Oracle being Oracle?" company President Charles Phillips said at the event.

Phillips and John Wookey, Oracle's applications development head, reiterated the

points Oracle first laid out in January, when the company introduced its Fusion road map. Oracle is scheduled to deliver a major update in 2006 in each of its three applications lines — E-Business Suite, PeopleSoft Enterprise, and EnterpriseOne (formerly J.D. Edwards) — and release an applications set built on Java-based Fusion architecture in 2008. Customers on all of the product lines will be able to smoothly upgrade to Fusion without any greater pain than they encounter in a standard applications upgrade, executives said.

Since unveiling their Fusion plans, Oracle executives have taken great care to deliver a consistent message about its PeopleSoft

See Oracle, page 36

HP

continued from page 35

about one-quarter market share, is the cornerstone of HP's Adaptive Enterprise strategy. Adaptive Enterprise is HP's overarching plan to incorporate hardware, software and services, and integrate them to help customers quickly respond to changing resource needs and thus help their organizations run more efficiently. Announced in May 2003, HP's Adaptive Enterprise competes with similar programs and products from IBM, Microsoft and Sun. And to prove it, HP made six OpenView-related acquisitions over the course of 2003 and 2004 to pump up the product line with the capabilities the vendor says it needed to deliver on its Adaptive Enterprise strategy.

Executive decision

OpenView executives last year worked to integrate the acquired technologies and delivered product, but this year has to focus on making money, industry watchers say. The software division brought in just less than \$1 billion in 2004 (the company as a whole hit about \$80 billion in revenue). While the software business continues to operate at a loss, it grew 18% in the first quarter over last year. HP says 16% of the growth is attributed to OpenView enterprise network and systems management software. The software group, which includes OpenView as well as OpenCall carrier network software, says it will bring the business back to profitability by the fourth quarter.

"When HP does financial analysis, there is one glaring red bar in their graphs and that's the software division," says Rich Ptak, a principal analyst with Ptak, Noel & Associates. "Last year was about penetration in the market, and this year will be about profitability."

According to OpenView executives, the company is on plan, including the losses, and the software business will bring in profit this year.

"We have spent time acquiring the critical [intellectual property] that we felt we needed to become a more strategic supplier to the CIO," DeLaughter says. "We have what we need, we've integrated it, and now we are completely in execution mode to deliver management solutions to customers."

The ultimate goal for OpenView sales representatives is to no longer sell single software products, but to provide a combination of wares and services that would help IT managers establish an automated, intelligent data center. HP as part of its Adaptive Enterprise Services last year announced its Agility Assessment Service, through which HP consultants would help IT managers determine what they needed to do to enable an automated and intelligent data center. For HP, the assessment could result in a bundle of sales, such as a consulting contract, outsourced services, network equipment and OpenView software.

"We are working to help our customers better synchronize their IT with their business by identifying how they can break

Frequent shopper

Recent HP OpenView-related acquisitions.

Company/technology acquired	When	Specialty	Product delivered
Novadigm	April 2004	Desktop and server automation	OpenView Automation Manager
TruLogica	March 2004	User provisioning	OpenView Select Federation
Consera	February 2004	Business-process modeling and tracking	OpenView Service Delivery Manager
Persist Technologies	November 2003	Information life-cycle management	StorageWorks Reference Information Storage System
Talking Blocks	September 2003	Web service management	OpenView Management Framework Platform
Select Access Technology (from Baltimore Technologies)	July 2003	Web access management	OpenView Select Access

down the IT silos and think more about service management. It has to be a change in their IT service delivery agenda," DeLaughter says.

Long way off

Despite management software executives' claims, users say HP has a long way to go to mesh its product lines.

Long-time customers say HP hasn't delivered a coherent message as to how the company can fulfill its Adaptive Enterprise plans. More important though, it remains unclear how acquired technology could help, say, a Network Node Manager (NNM) customer enable automation across an IT infrastructure. NNM is OpenView's cornerstone management software, released in 1989, which monitors network devices.

"Everything still seems rather separate. They may have bought technology, but they haven't brought it together well.

There is no coherent approach to bundling their software on their servers, for example," says a network manager at a Southeastern utility company who wished to remain anonymous.

For example, HP released in 2003 Systems Insight Manager, a server management product designed to handle basic server management tasks, from updating server BIOS and driver agents to updating patches, on Unix, Linux and Windows platforms. HP's OpenView Operations also provides platform-specific systems management software. It could be argued that HP should also have incorporated its OpenView technology into Systems Insight Manager or packaged the management software product as part of its OpenView brand.

"HP should get rid of the Compaq brand, really make it one company and quit the charade," the network manager says. "It needs to bundle the OpenView products

onto their hardware and start putting their own management software on their gear."

HP manages its corporate network with OpenView products, but it incorporates Altiris technology to manage its customers' desktop PCs through its HP Client Management Solutions. Last year HP acquired Novadigm, which has technology similar to what Altiris offers. HP also last year released OpenView Automation Manager from its Novadigm acquisition, but industry watchers say HP needs to better distribute OpenView technology across other HP products.

"HP needs to really put thought into how their management products can be used effectively across other products," Ptak says. "They are still too compartmentalized; they need to think past products and show customers that they have the hardware, services and software in-house that can solve IT and business problems." ■

Oracle

continued from page 35

support plans — mindful that before the contentious merger was approved, PeopleSoft's customers were confused and upset about the uncertain future of the company's ERP technology. Still, when it comes to specifics of how Oracle will blend its heterogeneous applications architectures, the answer is often "still to be determined."

One customer at last week's event asked how Oracle would reconcile a difference in database support. Because PeopleSoft supports a number of different databases, it stores much of its business logic elsewhere, while Oracle builds most of its business logic into the database layer. Phillips said Oracle is in the process of talking with customers about its options and will make a decision later.

"We decided to see how important that is to customers," Phillips said. "We can do a lot more for you if we can optimize and take advantage [of the database]. We can't do that for an unlimited number of [database] configurations."

Wookey said Oracle is looking to push more business logic into the middleware layer, potentially eliminating the problem.

Oracle also will limit its bundled database with Fusion to its own software — it

won't offer IBM's DB2, as it has in the past. It instead will work with IBM and other database vendors to certify their products for use with Fusion applications.

Oracle is still selling all of its acquired software, and is working on bringing PeopleSoft's pricing model in line with Oracle's, Phillips said. While Oracle maintains standard licensing prices on its software and publishes a price list on its Web site, PeopleSoft used a more complex pricing method for its products, which varied the software's licensing cost based on factors such as a customer's size, industry and annual revenue. Customers purchasing PeopleSoft licenses today still do so under PeopleSoft's licensing structure, but within the next few months Oracle will add PeopleSoft's products to its price list, Phillips said.

Oracle also plans to soon add PeopleSoft's applications to its Oracle On Demand hosted software service, which Phillips said now has 400 customers and around 100,000 subscribers. PeopleSoft had its own hosted applications business, but it never drew a large customer base, Phillips said.

Oracle's newest applications purchase, Retek, also will be put on track to blend into the Fusion architecture. Meanwhile, Oracle plans to integrate Retek's applications with its E-Business Suite within the

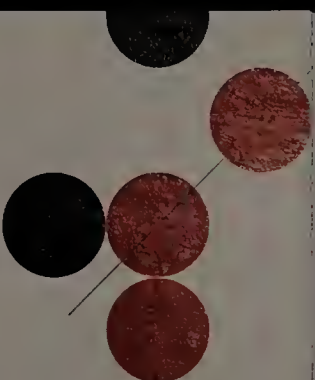
next six months, and with PeopleSoft's applications within the next nine months.

Phillips carefully avoided discussion of the current quarter and IT spending environment, which has spooked Wall Street after a run of earnings warnings and misses, including one from usually steady IBM. He also deflected a barrage of questions about whether Oracle would be interested in buying CRM maker Siebel, which changed chief executives last week after a disastrous quarter.

Oracle once had Siebel on its shopping list, a fact that came out in court last year during the long legal battle that preceded Oracle's PeopleSoft acquisition. But since then Oracle has spent \$10.3 billion buying PeopleSoft. Analysts say Oracle is unlikely to take on another multibillion-dollar acquisition so soon, especially of a company like Siebel that makes products significantly overlapping those already represented in Oracle's product portfolio.

Still, Phillips said Oracle's appetite for acquisitions isn't sated. Oracle plans to build a "retail global business" unit around Retek, a model the company says it hopes to emulate in other industry areas once it has a critical mass of content and technology in a given area, Phillips said.

Cowley is a correspondent with the IDG News Service.



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Big problems and little horror stories

This is a story that won't go away for quite a while, is likely to get far worse before it gets much better. The few weeks since I last wrote about the rampant data protection problems that

are facilitating widespread identity theft (see www.nwfusion.com, DocFinder: 6834) things have gotten worse — mostly not because things have actually gotten worse but because we're finding out

about incidents that were kept secret.

One story that perfectly illustrates the disregard that major companies have for the protection of the privacy and financial well being of the general public involves Polo Ralph Lauren Corporation. On U.S. tax day *The Boston Globe* broke the story that Polo Ralph Lauren Corporation last fall had had a computer break-in, but decided not to tell the people that they had put at risk about it. The only hint of the situation came out in the beginning of April when a bank (HSBC North America) notified 180,000 holders of a GM MasterCard that they should get a new card because their card number might have been compromised. MasterCard said it had been notified in January of the break-in but refused to say what merchant had the problem. Later, Visa said the same thing.

There is a long list of what is wrong with this picture: Polo Ralph Lauren decided to not protect its customers by telling them right away about the risk that the customers now faced because of the failure of Polo Ralph Lauren to properly protect the credit card information.

The credit card companies waited more than three months to tell their customers to watch their credit card statements. The credit card companies refused to tell the public who caused the problem so the public couldn't modify its shopping habits to avoid a merchant that puts its customers at risk.

So far it looks like Polo Ralph Lauren will not pay any penalty nor will it be responsible for helping to recover anyone whose card information was stolen. Other issues were brought up in a hearing that was held by the Senate Judiciary committee on April 13.

This hearing detailed many problems and little horror stories about the inability and, apparently, unwillingness of companies that know all about us to keep that information out of the hands of those who would do us ill. The immorality of companies such as Docusearch, which sold a killer information that lead him to his victim for \$154, is only slightly clearer than the immorality of data brokers such as ChoicePoint and Lexis Nexis that have provided almost unfettered access to similar information for a few dollars.

Congress, and state legislators, might just pass some of the many bills now in front of them. Sadly, the best of these bills will only require data vendors to take a little bit better care of our data and to tell us when the data gets exposed — none even tries to deal with the fundamental immorality of the basic business.

Disclaimer: Harvard tries to teach morality (see DocFinder: 6841) and seems to succeed more often than not but the above opinion of immorality is mine not the university's.

Bradner is a consultant with Harvard University's University Information System. He can be reached at sob@sob.com.

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Service Providers

■ THE INTERNET ■ EXTRANETS ■ INTEREXCHANGES AND LOCAL CARRIERS
■ WIRELESS ■ REGULATORY AFFAIRS ■ CARRIER INFRASTRUCTURE DEVELOPMENTS

Short Takes

■ **Sprint** says it sees many new opportunities emerging in **mobile data services** in the coming years, among them the chance to sell advertising on its mobile entertainment offerings, a company executive told a wireless conference last week. "It's inescapable that that's a great opportunity over the long term," said Paul Reddick, vice president of business development. The carrier, which late last year agreed to acquire mobile operator Nextel, also sees strong potential for location-based services and the use of handsets as electronic wallets. The ability to locate a subscriber's handset clears the way for practical applications such as tracking a fleet of company vehicles or locating a misplaced device.

■ **Netifice** last week announced a two-year contract valued at about \$400,000 with restaurant chain Noodles & Company. Netifice is deploying and managing its Retail Connect VPN service for Noodles & Company at its 100 restaurants across 10 states and the company's headquarters in Boulder, Colo. The service lets customers use any broadband service, such as DSL or cable, to access their corporate VPNs from a wide variety of providers. Netifice manages the entire network.

■ **MCI** will acquire **Interactive Content Factory** and its digital video-editing software under an agreement with TWI and its parent company IMG Worldwide. MCI also announced it has formed a new Digital Media Technologies group, focused on digital media products for media, entertainment and gaming organizations. The terms of the ICF deal were not disclosed. With ICF, MCI will acquire a package of digital video-editing software, including ICF Media Platform, for the management, production and delivery of digital content, and ICF NetEdit, for Windows Media editing over IP networks.

Verizon to offer VoIP-like service

■ BY JIM DUFFY

Verizon last week unveiled an enterprise version of its call and messaging management service that's designed to bring VoIP-like unified voice and data communications to traditional Centrex customers.

Verizon's lobi Enterprise service is a software client that enables users to manage voice and text messaging with call forwarding and other integrated data and telephony applications.

lobi Enterprise can be accessed from a PC, Web browser or voice portal. Verizon also plans to have the client downloadable to a cell phone and PDA.

lobi lets employees working remotely answer calls in real time or forward them to another device from any location. It lets users retrieve voice mails via their PCs, forward them using e-mail and organize them with their e-mail services. Mobile employees can link voice services with their daily schedules, enabling voice features to follow them as desired; and travelers can receive wireless notifications for missed calls and voice mail.

Farleigh Dickinson University in Madison, N.J., trialed the service and now plans to purchase it initially for its 50-member IT staff, says CIO Neal Sturm.

"It allows me to very easily manage my calls," Sturm says. "A pop-up comes up on the screen that shows me what the incoming call is, and then I can decide whether I want to take the call, route the call to my cell phone or voice mail, to my assistant."

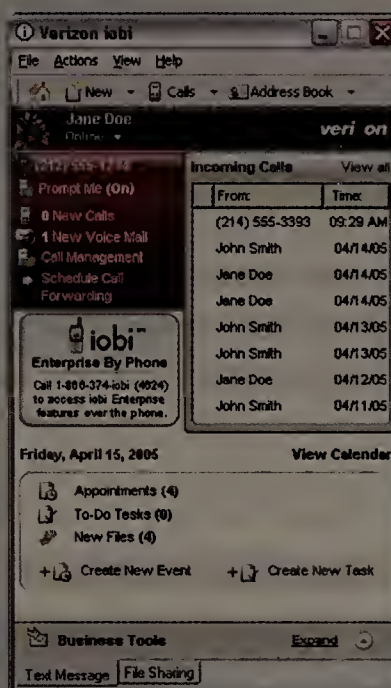
These capabilities are supposed to be the killer application for VoIP. But lobi lets the university IT staff access VoIP-like features without making an investment in VoIP, Sturm says.

The university still sees a place for VoIP in its Centrex environment, specifically as a way to extend campus four-digit dialing to remote locations, Sturm says.

"I see lobi fitting in both areas," he says. "I envision having my manager of telephone and voice services configure a VoIP line the same way she configures a Centrex line."

Verizon also does not see lobi dampening demand for its upcoming enterprise VoIP services. The carrier plans to offer VoIP-exclusive features, such as softphone capabilities, when it rolls out its Hosted VoIP VPN service for PBX customers this summer, and its IP Centrex service late this year or early next, says Lorena McCalister, director of product management.

Sturm also says he sees lobi as a way to



Features of lobi

Verizon's new enterprise integrated messaging service will:

- Manage voice and text messaging from a PC/Web client or voice prompt.
- Enable employees working remotely to answer calls in real time or forward them to another device.
- Allow users to retrieve voice mails via their PCs, forward them using e-mail, and organize them with their e-mail services.
- Support voice scheduling and send wireless notifications for missed calls.

get students back to using campus landline phones. Up to 70% of Farleigh Dickinson students use cell phones, and Sturm would like to get them back onto campus landlines to utilize a current asset and easily locate students in case of emergency.

The university also used to make money from landline voice, which helped fund data services it also provided to students,

Sturm says. But with the falling revenue in voice — caused in part by VoIP — that hasn't been the case for four years.

"Maybe lobi will be a value-added product that we can give to the students and draw them back onto the traditional landline service in the residence halls," he says.

lobi Enterprise is available in Verizon's Northeast and Mid-Atlantic regions. It costs about \$8 per month, per user. ■

AT&T expanding in China

■ BY DENISE PAPPALARDO

AT&T has been expanding its international reach these past six months — especially in China.

In fact, the carrier now says it has a broader reach in China than any other international service provider.

AT&T has built out its Multi-protocol Label Switching (MPLS) network by deploying switches and teaming with service providers in China. Last year AT&T had one MPLS switch in Shanghai through its joint venture Unisiti, in which Shanghai Telecom holds a 60% share, AT&T holds a 25% share and Shanghai Information Investments holds a 15% share.

While AT&T touts its status as the lone foreign service provider to have a telecom joint venture in China, that relationship is limited. The Unisiti business license is limited to Shanghai's Pudong business district,

which AT&T says is equivalent in size to Manhattan. But the joint venture lets AT&T directly work with customers in that area providing MPLS and other data services.

Throughout 2004, AT&T deployed additional MPLS nodes in Beijing, Shanghai and Guangzhou in southern China.

Five months ago, the carrier also struck up agreements with China Telecom and China Netcom to reach 60 cities throughout China. AT&T has network-to-network interfaces (NNI) with both providers.

Before AT&T set up the NNIs with China Telecom and China Netcom, customers would have to use domestic, long-haul connectivity to reach AT&T nodes in Beijing, Shanghai and Guangzhou. Now customers have more direct access.

"In some countries it's more efficient to go through local carriers," says Rose Klimovich, vice president and general manager of VPN and integrated network services at AT&T. ■

EYE ON THE CARRIERS

Johna Till Johnson



It's axiomatic these days that the U.S. desperately needs a national broadband policy. You've probably heard the "thirteenth and slipping" statistic: According to recent studies, the U.S. is lagging compared with other nations — particularly in the Far East — in terms of per-capita broadband access. And apparently the reason is the lack of a national broadband policy.

Says FCC Commissioner Michael Copps: "Why in the hell is the United States No. 13 and heading south in broadband deployment? Why are folks in Korea and Japan getting 10 times the capacity at a half or a third or a quarter of the price? We may be the only industrial country on the face of God's green Earth that doesn't have a national plan for broadband deployment."

There are a few arguments behind the

Why do we need a national broadband policy?

call for a broadband policy.

A report late last year by Consumer Federation research director Mark Cooper says the issue is basic fairness and the need to address the "digital divide" between rich and poor. Specifically, Cooper says, in 1934 the U.S. made the decision to support universal telephone service to all households. Yet without universal broadband access, universal service is a joke. (See www.nwfusion.com, DocFinder: 6832 for the complete report.)

TechNet, the online network of executives at high-tech firms, including Cisco CEO John Chambers (see www.technet.org), makes a slightly different case: Lack of ubiquitous broadband access is slowing the economy. "Universal access to high-speed Internet connections could inject an estimated \$300 billion into the U.S. economy each year," this group says. (And, of course, plowing those billions into tech gear wouldn't exactly hurt Cisco's stock price, although TechNet doesn't bring that up.)

Hmm. I've got to admit that I'm struggling with these arguments. Not enough people want to spend the \$40 to \$50 per

With all due respect to the nice folks in San Jose, what's good for Cisco isn't necessarily what's good for America.

month that cable modem, DSL and satellite service cost? This is a problem because — why, exactly?

People aren't idiots. Joe and Jane American probably have a better handle on how they'd like to spend their cash than you, me or the feds. After all, something like 97% of all households — including the very poorest — have at least one TV, and a whopping 80% have more than one. Yet we don't have a "national television policy," much less a "television divide."

As for TechNet's argument that we're holding back the economy: With all due

respect to the nice folks in San Jose, what's good for Cisco isn't necessarily what's good for America.

Sure, lots of people want broadband access — more people than want to pay for it, in fact. But that in and of itself isn't a reason to subsidize it.

Don't get me wrong, as I've written many times, our current universal services policy is demented. Universal service desperately needs to be fixed, and better broadband to the home might be part of that fix.

But to justify better broadband services, we need a stronger argument than subsidizing services to people who don't want to pay for them for the benefit of high-tech firms seeking to sell stuff.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.



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Is security ripe for outsourcing?

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the last paragraph of the letter usually written by the person actually charged. In many cases, however, the letter is written by the attorney.

The last paragraph usually contains the signature of the person actually charged. In many cases, however, the letter is written by the attorney.

Keeping track of NASCAR

[illegible]

1. *Figure 1: A line graph showing the relationship between the number of hours spent studying and the score on a test. The x-axis represents 'Hours Studied' (0 to 10) and the y-axis represents 'Test Score' (0 to 100). The data points are (0, 0), (2, 20), (4, 40), (6, 60), (8, 80), and (10, 100). The line is a straight line passing through the origin.*

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Technology update

■ AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

C1G2 standard revs up RFID

■ BY DAN OGLEBAY AND CHARLES RICE

Initiatives from retailers and the U.S. Department of Defense to launch passive radio frequency identification in the supply chain affect consumer, pharmaceutical and defense manufacturers. However, the lack of globally accepted standards and the limited functionality of current, proprietary, passive RFID technology, hinders wide-scale adoption.

To address these challenges, EPCglobal, the international RFID standards body, recently approved a standard called Class-1, Generation-2 (C1G2). The standard specifies the communications protocols between RFID tags and readers in the ultra-high frequency (UHF), or 860- to 960-MHz, range. Test quantities of C1G2 tags already are shipping, and production quantities of the tags will be available in the third quarter.

C1G2 creates a specification that is faster, more secure, globally recognized and, eventually, less expensive to deploy. It also provides a royalty-free framework toward which all major technology producers — including chip, reader, label, printer and software providers — can build. This will help drive adoption and bring down cost.

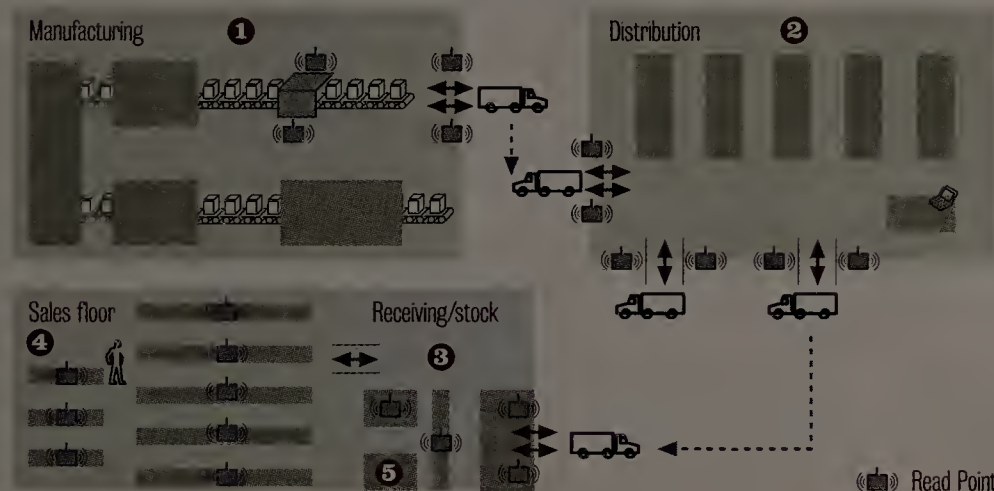
The standard already has been accepted in Europe and North America. China is expected to ratify the C1G2 standard by year-end.

C1G2 increases tag-read speeds to roughly 1,500 reads per second in the U.S. (600 reads per second in Europe), compared with 100 to 300 for current tags. Write speeds are twice as fast as those achievable with C1G2. This is especially critical because RFID is deployed within manufacturing lines and other high-speed environ-

■ HOW IT WORKS

Class-1, Generation-2

C1G2 specifies the communications protocols between radio frequency identification (RFID) tags and readers. It facilitates RFID in the supply chain by providing for increased speeds, less interference and more security.



- 1 Products are tagged with RFID labels at the manufacturer and read as they depart the facility. C1G2 spurs faster tag application through lower write times.
- 2 RFID-tagged shipments are read at receiving, in inventory and at shipping in the distribution center. C1G2's dense reader mode decreases interference in environments where many readers are deployed in a small area.
- 3 Product is received at the store and is read as it enters the store back room and as it moves to the sales floor. This example shows RFID-enabled shelves on the store floor and in the back room.
- 4 Customers retrieve and scan products. C1G2's enhancements to tag security decrease the probability that consumers will buy counterfeit or expired products.
- 5 Inventory levels are more accurately tracked, leading to fewer out-of-stock situations. Replenishment information from the store is communicated to the factory.

ments. For example, a typical consumer-goods manufacturing line can move at 200 cases per minute and a pharmaceutical bottling line can move at 400 bottles per minute, both well beyond the write capability of current tags and readers.

C1G2 also substantially improves security. The original focus of the Class 0 and C1G1

legacy specifications was for supply-chain case and pallet deployments. As RFID spreads to usage on individual items such as pharmaceuticals and, eventually, items on the store shelf, security will become much more important (protecting the tag information and users' privacy). The standard includes functionality to password-

protect read access and permanently lock memory contents, and increases the "kill" password length from eight to 32 bits.

C1G2 implements a sophisticated anti-collision algorithm that greatly improves the ability of the reader to read large numbers of tags in the read field at one time. This anti-collision algorithm, along with the utilization of spread-spectrum techniques, allows readers to selectively communicate with individual tags at different frequencies within the accepted range.

Lastly, the C1G2 specification addresses cross-reader interference. The read range for UHF can be 10 to 20 feet in open air. Situations such as opposing sides of the same dock door, side by side in point-of-sale configurations or daisy-chained on a conveyer line could result in cross-reader interference.

This standard defines three different modes or types of readers: Single-Interrogator, which is certified to work only when there are no other readers within a 1-kilometer, or 0.62-mile, radius; Multi-Interrogator, which can be deployed with 10 or fewer within a 1-kilometer radius; and Dense-Interrogator, which is certified to work alongside 50 or more readers within a 1-kilometer radius.

These and other features contribute to making C1G2 a robust method of rapidly and securely communicating information between RFID tags and readers. The C1G2 specification is a great start toward enabling enterprise deployment of RFID throughout the global supply chain.

Oglebay is senior radio frequency engineer and Rice is vice president of technology for R4GS. They can be reached at doglebay@r4gs.com and crice@r4gs.com, respectively.

Ask Dr. Internet by Steve Blass

I can run Apache Lenya on my Linux system with Java 1.4, but not on a Windows system with Java 1.5. Does Lenya really work with Windows?

It works with Windows, but not with Java 1.5 yet. Although Lenya seems to build successfully with Java 1.5, it doesn't operate completely correctly in that configuration. However, with Java 1.4, all the site management features work correctly if all required supporting tools are in place. Lenya uses

the program "xsltproc" for manipulating XML documents with the XSLT style sheets to produce HTML Web pages. Linux systems are likely to already have the xsltproc programs installed by default, unlike Windows. Pre-compiled Windows versions of the xsltproc tools are found at www.nwfusion.com, DocFinder: 6833. After downloading and installing "iconv," "zlib," "libxml," and "libxslt," rebuild Lenya using a Java 1.4 SDK. Type "build kupu" to build Lenya with the Kupu Web

page editor included. Run the newly built Lenya by executing lenya.bat. Go to <http://localhost:8888> and log on to the editor view by following the prompts. Now you should be able to add or delete document pages through the Site tab menu, as well as edit the pages using Kupu from the Edit tab menu.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

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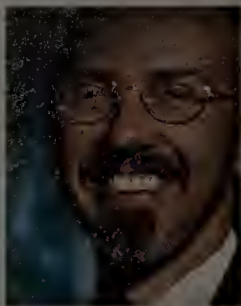
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GEARHEAD INSIDE THE NETWORK MACHINE

Mark
Gibbs



Some time ago we helped a friend install a new Windows 2003 server and when we got to the part where you have to give the server a name he asked, "What shall we call it?"

His existing server was called Server1 (yawn) so his network was pretty much a green field where names were concerned. So what to choose? Maybe name it after a planet, say Jupiter or Saturn, or an animal, such as Horse, Zebra or Dolphin?

The problem is that the names we call things matter. If you work in a large multi-national organization and name your network servers after cities, then the complaint "I can't see Tokyo" or the question "How do I get to London?" could cause all sorts of confusion.

If our friend had selected planets he'd have been limited to nine names (not a problem for our friend because his network is unlikely to have that many servers). Of course, he could have resorted to using the moons of the planets in the solar sys-

The name game

tem. As of October 2003 there were 135 known natural moons orbiting the solar system's planets. . . . Jupiter alone has 60 moons, including Ananke, Carme, Callirrhoe, Erinome and Himalia, all of which are pretty sexy server names if somewhat hard to pronounce.

The big problem comes when naming all of the machines on your network. If your network isn't too huge, go for a theme. For example, the naming convention used in the Gearhead Laboratories is based on Lewis Carroll characters and words. Thus we have the two main servers, Gyre and Gymbble, and the network is named Wabe, while the workstations include Alice, WhiteRabbit, RedQueen, WhiteQueen, Pig, Pepper, Brillig, Outgrabe and Jabberwocky.

When we started Novell UK, we whimsically named the servers with book titles so we had "ZenAndTheArtOfMotorcycle Maintenance" and "TheImportanceOf BeingErnest." This lasted until the technical staff staged a coup and renamed them "Alpha" and "Beta" or something equally dull, claiming that their typing skills weren't up to the challenge.

Did you know that there is actually an RFC dealing with the naming of computers? Check out RFC 1178, "Choosing a Name for Your Computer" (www.nwfusion.com, DocFinder: 6836).

For some ideas about what to call your machines check out "Names Given To Computers" (DocFinder: 6837) and "Tips For Naming Computers" (DocFinder: 6838).

Also, take a look at "Coolest Hostnames" (DocFinder: 6839), which is an old page compiled originally by Meng Wong, the lead developer of Sender Policy Framework and founder of Pobox.com. Our favorites are com.com.com and space heater.brownout.com.

If you have any thoughts on naming, let us know. What did our friend name his new server? He went for "Server2." Ho-hum.

Another naming task we often get involved with is looking for domain names. This is as hard as naming a product or a business and frequently amounts to the same thing.

We found the Domain Name Generator (www.domain-generator.net), which produces some good random names. It also explains which top-level domains versions are available and will create and test the availability of simple permutations — which can include hyphens.

Also worth a look is Namedroppers.com (<http://namedroppers.com/>), which will scan the Whois databases for one or more keywords you specify and will either look

for them in order or randomly and lists existing and available domains.

Another neat name-creation resource is MakeWords (www.makewords.com), which algorithmically creates words that sound English or, if you prefer, Hungarian, Japanese or even Klingon!

Some English site names that MakeWords.com produced were bleptaph.com, epsicasi.com and huntleph.com, while Japanese names included syukih.com, hensyo.com and kindensono.com. We know you're wondering, so here's part of the Klingon output: chohdi.com, hinamanama.com, puqlodli.com, rintah.com and yidajdaq.com.

Finally, Domain Name Pro is a neat and fairly sophisticated program that costs \$70 and is published by Backlash (www.mozzle.com). DNP provides six ways to extract potentially useful domain names from single or multiple URLs, existing domain names, or words and facilities. You can check the availability of a domain name as well as the attributes of names already taken. You can even register your interest in acquiring a name that is already taken.

Tell gearhead@gibbs.com what's in a name. As always, don't forget Gearblog (www.nwfusion.com/weblogs/gearblog).



Cool Tools

Quick takes
on high-tech toys
By Keith Shaw

Averatec launches new notebooks

Averatec last week launched new notebooks aimed at making notebooks more personalized and customized, as opposed to just "black bricks."

The Averatec 4200 series and 1000 series of notebooks include the latest technologies, and some snazzy design features such as a white keyboard and either "jet blue" or "burgundy" external shell.

The 4200 is a 4.6-pound notebook that features a 13.3-inch widescreen display, a choice of an Intel Pentium M processor with Centrino mobile technology or an Intel Celeron-M 360 processor, 512M bytes of memory and an 80G-byte hard drive. It also features multiple-format DVD +/- burner optical drive, three USB 2.0 ports, a Type II PC card slot, 10/100M bit/sec Ethernet, 802.11g wireless LAN connectivity and a four-in-one memory card reader (supports Secure Digital, MultiMedia Card, Memory Stick and Memory Stick Pro cards).

The 1000 Series is a 3-pound notebook that includes a 10.6-inch widescreen display, a choice of an Intel Ultra Low Voltage Pentium M processor 733 or Ultra Low Voltage Intel Celeron M processor 373; 512M bytes of memory; a 60G- or 80G-

byte hard drive; a DVD/CD-RW combination optical drive; three USB 2.0 ports; a PC card slot; 10/100 Ethernet port; 802.11g wireless connectivity; and a four-in-one media card reader.

The 4200 series will cost about \$1,200; and the 1000 series will start at about \$1,150, Averatec says. The notebooks are expected in retailers and through Averatec's Web site by mid-May.

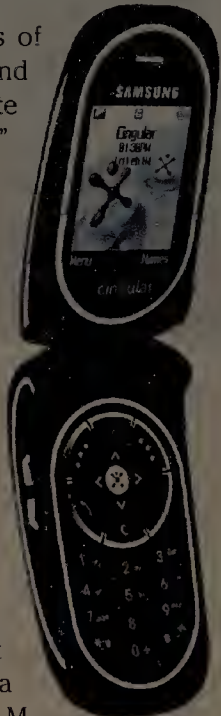
Samsung phone has voice-enabled text entry

If you really want to try text messaging on a cell phone but don't like the "tap-tap-tap" features on current phones, Samsung wants you to use your voice. The new p207 is an EDGE-based phone that includes VoiceMode technology by VoiceSignal. The speech-to-text feature lets users dictate text messages instead of typing them. Samsung says users can train the p207 "through a series of spoken prompts that captures voice tone and intonation." Once trained, the system lets users dictate messages by their voice.

The phone has other voice-recognition features such as voice dialing, address book name lookup, application launching and a phone status check (such as battery life status).

It also has an integrated VGA camera and video recorder, MP3 ring tone support, multimedia messaging and instant messaging applications. The phone is now available through Cingular for about \$80 (plus monthly service fees and contract length).

Samsung's p207 cell phone lets you dictate messages instead of "tap-tap-tapping."



Protect mobile workers with a hardware VPN

Mobile workers accessing networks (corporate or otherwise) through unsecure locations (pretty much everywhere but the office) certainly could be a problem for you. Zyxel Communications recently launched its Zywall P1 Personal Internet Security Appliance, a small device that acts as a firewall and VPN device that mobile workers can use to secure an Internet connection while traveling. The Zywall P1 costs about \$300 and is available through resellers and the Zyxel Web site (www.us.zyxel.com).

The device sits between a broadband connection and an end user's computer via an Ethernet connection, and also draws power from the user's USB port. Security features include a stateful packet inspection firewall and IPSec VPN client support. The P1 measures 5 by 3 inches and weighs 4.5 ounces, designed to fit into a worker's travel bag, the company says.

Companies that have given their mobile workers software-based VPN clients also can benefit from the device, Zyxel says. Performance can be faster with a hardware device, it can be centrally managed, and end users cannot disable or modify security features like they can with a software-based firewall. Zyxel says the P1 is designed to be plug-and-play for easy installation.



The Zywall P1 acts as a VPN device and firewall for use on the road.

Shaw can be reached at kshaw@nwfusion.com.



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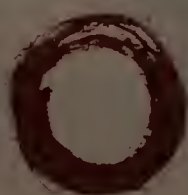
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Face-off

Should your company replace its legacy systems?

'Rip and replace' or preserve and extend? Two insiders debate the issues involved.

Yes, by Zach Nelson
NetSuite



No, by Joe Gentry
Software AG

Neil Young says it's better to burn out than fade away. Maybe in life that's the case, but in the world of legacy applications, fading away is, realistically, what usually happens. There are many reasons why companies keep a portion of their IT infrastructure on legacy applications — oftentimes from fear of pulling the plug. These firms should consider this: The power of moving at least their core applications over to a modern, integrated system can deliver huge benefits. Here are three reasons why:

- **The competitive factor.** Some 95% of our clients adopt NetSuite to replace patched-together legacy systems that can't share essential data. The lack of transparency throughout the system, these firms have found, seriously hampered their ability to compete. Compare tracking an order in a legacy system to a modern, Web-based integrated application. Order management is a process that starts from the first point of customer contact and ends with the fulfillment of the order. Older systems required a great deal of expensive customization to link this process across a salesforce automation module, ERP system, order management application, and then the warehouse and fulfillment systems. Often glitches will remain — data, say, must be entered multiple times at multiple points and customer information usually remains siloed throughout the system.

- **Regulatory issues such as the Sarbanes-Oxley (SOX) Act.** Depending on the industry, the process of managing customer data must be relentlessly tracked and ready to be produced to auditors at a moment's notice. Other new regulations, especially privacy laws, touch upon customer data. Here, the main challenge is that too many systems are providing access to customer data. Ultimately, SOX is about the processes for managing data, not the data itself; therefore, reducing the number of legacy applications required to run your business will certainly make SOX compliance easier and less expensive.

- **Newer systems are far easier to use.** User interfaces in legacy systems, especially first-generation ERP systems, rarely match the way people actually do their jobs. They also require the intervention of highly (and expensively) trained IT staff. Consider predictive analytics, an essential component to most marketing and sales systems today. To use them in legacy systems, engineers trained specifically in these methodologies must do the programming. Newer applications, by contrast, have analytical applications built directly into the marketing and sales operations. A typical business user can program and use this embedded functionality with little or no assistance.

Also, when the application is delivered through the Internet, users have 24/7 access to real-time data. In an integrated Web-based system, data never has to be entered more than once — the most common origin of mistakes — and its status is available to everyone from the accounts receivable department to customer service to a sales rep trying to land yet another order with the same customers.

Nelson is president and CEO of NetSuite, a provider of integrated business application software. He can be reached at znelson@netsuite.com.

In today's fast-changing technology landscape, the term "legacy" often receives a negative connotation. But for many companies, legacy systems are mission-critical. They run the purchasing, manufacturing, financial, customer and payroll applications that form the very backbone of the business. They house the data and business processes that differentiate a company from its competitors and represent years of intellectual property. While these systems might have been developed several years ago, they still reliably meet the business' requirements. Replacing them with new systems in a single grand gesture rarely makes technical or economic sense.

As real-world examples prove, rip and replace can be costly and prone to failure. When a major automobile manufacturer wanted to replace a mainframe-based purchasing system, one of its primary applications platform vendors advised the customer to re-write the application in Java and run it on Solaris. Four years and millions of dollars later, the customer scrapped the Java project because it did not meet the company's needs and returned to the mainframe. Even for projects that succeed, rip and replace is a costly, time-intensive approach.

If you decide to take a more calculated and less radical path to maximize the value of your legacy systems, what options do you have? There are four approaches to preserving and extending legacy applications — from simple to sophisticated:

- **Leave the system as it is.** If executives, partners and customers aren't complaining, you most likely can keep what you have.

- **Make minor enhancements.** You might decide to make a few changes to comply with executive requests, but you are essentially preserving what you have.

- **Begin extending and modernizing the legacy applications.** You might replace a green screen terminal with a new GUI or Web browser, giving the application a new, modern feel.

- **Move toward a service-oriented architecture (SOA) by extending legacy applications as Web services.** By providing a library of services that can be called on to deliver features and perform tasks, SOA enables companies to roll out products faster and adapt applications to meet changing customer demands. It is based on open standards, widely supported across all vendor environments, and will not lock you into an architecture that could prove difficult to support in the future.

How do you decide which approach to take? Focus on applications that are most valuable to your business.

Determine what impact the application's lack of availability would have on day-to-day operations; also consider the application's overall quality and complexity, your team's knowledge of the actual code, and how much time and money you are willing to invest.

Preserving and extending is not a "one size fits all" strategy, but rather a prudent way to adapt to the environment you are in today, as well as prepare for future changes in the business and technology landscape.

Gentry is vice president of Enterprise Transactions Systems at Software AG. He can be reached at joe.gentry@softwareag.com.



More online!

Log on to Network World Fusion to voice your opinion. Face-off authors Zach Nelson and Joe Gentry will add their thoughts to the discussion.

DocFinder: 6840



ON TECHNOLOGY

John Dix

Will free VoIP change the game?

Six months ago Skype, the self-described global Internet telephony company, hit a milestone: For the first time ever, the Skype system was used to support 1 million simultaneous calls.

That was remarkable given the company was just more than a year old. But Skype was just warming up. Its growth has since gone through the roof. At one point last week the company had 2.6 million callers online.

In that six-month period the number of people who have downloaded the company's software — which lets users talk to other Skype users over the Internet for free — mushroomed from 13 million to 102 million, and the number of minutes served jumped from 2 billion to 7.6 billion. (If the download counter on the company's Web site is to be believed, more than 21,000 people download the software every hour.)

This is the instant messaging phenomenon all over again, but unlike IM, the rise of this free Internet tool takes money directly out of the pockets of legacy players — big old telephone companies. At an average of, say, five cents per minute, that's \$380 million in revenue Skype just sucked into the ether.

And the number is probably even larger given that calling in Europe, where the bulk of the Skype traffic is today, is more expensive.

While Skype is likely to make fewer waves in the U.S. because calling rates here are relatively low, Internet telephone innovators such as Vonage still charge a fee (\$25 per month for premium residential), as do the traditional carriers that are trying to keep up: AT&T charges \$30 per month for its CallVantage service and Verizon charges the same for VoiceWing.

Skype, on the other hand, gives the basics away, choosing instead to make money on premium add-ons. SkypeOut, for example, lets callers dial off-net to regular phones for around 2 cents per minute. And the company just announced it is beta testing a voice mail service that will cost \$19 per year, and a service called Skypeln that, for \$39 per year, will let customers pick a country and area code and get a regular telephone number that callers can use to reach Skype customers, no matter where they happen to be.

That feature alone might sway domestic users who don't care much about costs, or they might be motivated by the IM-like dashboard that shows what buddies are taking calls.

If nothing else, the success of Skype indicates Internet telephony may be more disruptive than many now believe. The peer-to-peer technology from the founders of Kazaa could be a sign of things to come.

—John Dix
Editor in chief
jdix@nww.com

Certifying professionalism

Thanks to Linda Musthaler for putting in writing the concept of an IT oath (www.nwfusion.com, DocFinder: 6827). I'm a member of the Canadian Information Processing Society, the professional society for IT in Canada. Membership in CIPS requires adherence to a code of ethics and standards of conduct, as posted on our Web site (www.cips.ca).

I find it interesting that most IT workers, especially those under 30, apparently have no concept of "do no harm" and/or behaving ethically in their work practices. They seem to be guided by expediency rather than ethical behavior.

For many years CIPS has been certifying individuals in "professionalism." The designation "Information Systems Professional" is one to which individuals can aspire.

Ian Frazer
Pacific regional director
CIPS
Victoria, British Columbia

Key to retrieval

Regarding Kevin Tolly's column "Identity theft, data security, back-up services" (DocFinder: 6828): Tolly is incorrect about the data being stored unencrypted at the third-party site. If that was the case, no one would trust third-party storage. My company's system and most others I have researched keep the data encrypted and only the customer has the key. We must warn customers that if they lose their key, there's nothing we can do to retrieve their data.

Rick Russon
President
Red Ocher Solutions
Denver

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.



More online! www.nwfusion.com Find out what readers are saying about these and other topics. DocFinder: 6826

HURDing cats:



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opinions!

Expectations too high

The article "802.11i secures wireless LANs" (DocFinder: 6829) mentions that Wired Equivalent Privacy provides very little of the privacy it advertised. The only thing WEP advertised was that it would provide a privacy level subjectively equivalent to a wired network. What level of privacy can be expected on a wired network today? My answer would be: very little to none.

I do not believe there was anything wrong with WEP. People got the mistaken impression that a high level of security would be provided mainly because of aggressive marketing from vendors. I fully agree that 802.11i is a giant leap ahead.

Clement Dupuis
Quebec

Identity bit by bit

The article "High-profile identity thefts force govt., industry to take action" (DocFinder: 6830) addresses only the low-hanging fruit.

Consider, for example, all the free and even paid magazine subscriptions people sign up for. One key piece of information asked to validate the subscription usually has to do with city or town of birth, state of birth, mother's maiden name, or day, month or year of birth.

Granted, peddlers don't ask for all this information at one time; they only ask for one bit. Then, that information is passed on to their "participating" companies, which also are collecting other bits of "validating" information. Before you know it, they've got your full name, birth date, place of birth and mother's maiden name, not to mention your home address, home phone and cell phone to boot. Yep, they've got your identity!

Mark Rohrer
Palm Dale, Calif.



BOTTOM LINE

Joel Snyder

Recently, I was helping a customer with a wireless rollout when the person in charge of security pulled a set of requirements out of his back pocket. The goal of this wireless network was to support guest users — people who had come into the building for a meeting or short project.

The security requirements started with “disable Service Set Identifier advertisement” and “use 128-bit WEP.” I rolled my eyes.

“What’s the point of this?” I asked. “These are best practices,” the security person replied, gesturing toward the thick stack of white papers, articles and Web postings he had downloaded off the Internet. After all, if 50 security people are writing the same thing, you begin to believe it’s the right thing to do.

Unless, of course, it’s not. And that’s the problem with this type of advice. We have way too many people writing as wireless security experts and way too few actually thinking about wireless security. We also have way too few keeping up with the changes in the technology and how we use it. This problem isn’t unique to wireless security — it extends to every aspect of how we do security and design networks.

What happens is that early thinking on how to build security becomes codified as law, largely by people who gather most of their knowledge by doing Google searches and writing white papers based on what other people already have said. SSID hiding is a great example. This was an interesting idea before the AirJack folks

The security status quo is wrong

demonstrated how stupid it was — back in 2002. Nevertheless, people continue to pick up this same bit of lame advice and offer it as a primary requirement for secure wireless.

Yeah, SSID hiding does provide security — job security for your help desk staff, which will be continually explaining to people how to spell your SSID and enter Wired Equivalent Privacy (WEP) keys. Let’s not even get started on WEP. As *Network World* demonstrated last year, even brand-new wireless access points cannot be trusted to be free of defects (www.nwfusion.com, DocFinder: 6831). The solution is to abandon WEP and use a security technology that doesn’t have the problems WEP does — 802.11i, also called WPA2.

We have become a community of parrots, repeating the same rules and arguments for doing things that have become “conventional wisdom.” As Cisco’s Mark Basinski puts it, “The problem with conventional wisdom is that it’s neither conventional nor wisdom.” Mark is spot-on. We do things by rote, without thinking about whether that’s still the best way to design and implement security.

Even sacred cows such as three-port firewalls (“inside,” “outside” and “DMZ”) need rethinking. Is that really the right way to do things? How many networks have a need for exactly three, and only three, security zones? Are we designing secure networks, or are we replicating the same network architecture that seemed right back in 1990?

Snyder, a Network World Test Alliance partner, is a senior partner at Opus One in Tucson, Ariz. He can be reached at joel.snyder@opus1.com.

We have become a community of parrots, repeating the same rules and arguments for doing things that have become “conventional wisdom.”



ABOVE THE CLOUD

James Kobielus

For several years, we’ve been hearing of the promise of enriched browsers that deliver fast, interactive, desktop-like GUI experiences. A small group of vendors has sprung up to provide the client and server software necessary for enriched browsing, and has coined an acronym — RIA, or rich

Internet applications — for this approach. Macromedia, the pre-eminent RIA vendor, has succeeded in getting its Flash client on most desktops, integrated with Microsoft’s Internet Explorer, the pre-eminent basic browser. And Microsoft has committed to integrating RIA functionality into its next-generation Longhorn client operating system.

Why, if Macromedia Flash is so widespread, are so few Web applications written to take advantage of its RIA features such as the ability to cache data and application logic on the client side for offline browsing? This is not to deny that Flash is leveraged in some Web applications, but most developers target only the common-denominator browser functionality found in Internet Explorer, Mozilla Firefox, Apple Safari and other baseline browsers.

Fundamentally, RIA hasn’t dominated the Web because it can’t be taken for granted. RIA assumes a client-side component, such as Macromedia Flash, or client-side support for a specification, such as Microsoft’s Extensible Application Markup Language, which aren’t integrated universally into all browsers. RIA, as practiced today, violates the “write once run anywhere” dictum of mass-market Web applications. Any approach that is predicated on downloadable components or future standards just isn’t ready for Web prime time.

Recently a new acronym, Ajax (for Asynchronous JavaScript + XML), coined by Web application design consultancy, Adaptive Path, has been jostling RIA for mindspace in the enriched browsing universe. Ajax represents a different and potentially more ubiquitous approach that’s well within the capabilities of most of today’s baseline browsers.

Ajax and RIA refer to the same core phenomenon — the enriched browser-oriented Web presentation tier. But Ajax references open indus-

try standards, whereas RIA carries the unpleasant connotation of partially proprietary approaches from vendors such as Macromedia, Nexaweb Technologies, Altio and Laszlo Systems. Ajax encompasses standards-based client-side presentation using XHTML, HTML, Cascading Style Sheets and Extensible Stylesheet Language Transformations; standards-based client-side processing using JavaScript; and asynchronous data retrieval using XMLHttpRequest (supported in Internet Explorer and other baseline browsers).

Yes, cynics will note that Ajax refers to nothing radically new but simply to standards-oriented best practices that some developers have adopted. In this regard, Ajax isn’t much different from Representational State Transfer and Service-Oriented Architecture. Even Dynamic HTML wasn’t a substantially new approach, but rather a new term for Web development that leverages HTML and JavaScript.

As it gains currency, Ajax popularizes an enriched-browsing approach that will become mainstream over the next two to three years. The history of the Web teaches us that any simple approach that leverages the features of the baseline browsing environment — such as HTTP, HTML and Java Script — will widely succeed.

Of course, Ajax won’t become the one and only approach for rich browsing overnight. It will need to coexist with partially proprietary approaches such as Microsoft’s Avalon and Macromedia’s Flex. Indeed, the number of RIA vendors continues to grow. The growing popularity of Ajax would cause their niche market to vanish before it had a chance to get well established.

But that shouldn’t concern enterprise Web application developers. They should adopt Ajax as the common-denominator approach for enriched Web browsing. It’s an approach that they can safely assume is supported in the majority of current and future browsers.

Kobielus is a senior technical systems analyst at Exostar. He can be reached at (703) 924-6224 or james_kobielus@hotmail.com. Tune into his blog at jkobielus.blogspot.com. The opinions expressed are his own.

A small group of vendors has sprung up to provide the client and server software necessary for enriched browsing.

The new old enriched browser

NETWORLD+INTEROP



MONDAY MAY 2

PICKUP 11:15 DAY

8:30 a.m. to 4:30 p.m.
SSL VPN Day

As business becomes increasingly virtual and remote access becomes the norm, it is critical to make sure those tapping into your network are legitimate. But how best to provide secure remote access?

IPSec has been the answer for most companies that want for ironclad security. But what about evolving SSL VPN technology? With SSL VPNs, network managers don't have the headache of having to install software on remote devices because users tap into the network via a Web browser and an SSL connection.



Joel Snyder

Join Joel Snyder, a Network World Test Alliance partner and a senior partner at Opus One, for this intensive daylong workshop that will give the lowdown on all SSL VPNs can

offer. The workshop will provide the nitty-gritty on how SSL VPNs work, what features are common to SSL VPN products, how different products affect application access and how best to evaluate them. Attendees will find out how to determine whether the technology is the best fit for their organization.

8:30 a.m. to 4:30 p.m.
Network Forensics Day

There's no murder mystery here. But for network managers, the detective work during this daylong session likely will be just as exciting. Bill Alderson, executive network analyst at the Pine Mountain Group, and Marshall Manhoff, senior technical manager for AOL's network analysis group and out-of-band access team, lead the event that gives attendees a firsthand look at how to

IT budgets are up again this year, but only by 6% according to IDC. So while executives plan to spend, they still have to be careful about just where their dollars are going. This year's NetWorld+Interop offers a real-world look at many of the most tempting technologies.

Wireless, collaboration technologies, VoIP and the increasing Webification of business applications are all placing new demands on corporate networks. The plus side is that there is no shortage of innovation when it comes to addressing these growing network needs. The downside is that sometimes it's hard to know which of those technologies is right for you.

"There are new application demands and I think a lot of companies are finding that their infrastructures are not capable of delivering so they're having to re-evaluate and in some cases re-architect their infrastructures. In doing so, they have to make the right decisions the first time," says Steve Wylie, N+I director of content. "N+I becomes the safe place to make those decisions in context because they can see new technologies as part of a working system."

In addition to the Interop eNet, which will give users a look at VoIP, anti-spam appliances and performance-monitoring tools in action, attendees will have access to more information than they have had in the past. The event will include more free educational seminars than ever before on everything from security to network performance to open source. There will be the usual expert-led seminars, tutorials and workshops. And 375 exhibitors are expected to crowd the show floor, a 10% jump from last year.

Wylie and N+I General Manager Lenny Heymann say more than 17,500 people are expected to attend this year's show, an almost 10% increase from the 16,000 who showed up last year. So if you're among those heading to N+I's new digs at the Mandalay Bay Convention Center in Las Vegas, keep this planner on hand. We've pulled out some of the highlights to help you get the most out of the show.

solve the mysteries of network and application underperformance. They will guide attendees through troubled, complex, multi-vendor network environments and show how to pinpoint and fix these problems, as well as how to prevent them.

TUESDAY MAY 3

PICKUP 11:15 DAY

2 to 2:45 p.m.

Assembling and Running a Test Lab Inside Your Company

Network managers under pressure to put products through its paces before deploying them on a live network should

make room for this session. Joel Snyder and VPN Consortium Director Paul Hoffman will share tips for how to avoid kinks when running your own test lab. They'll offer advice on how to save your time and your company's money. Everything from patch cords and power strips to automation scripts and open source test tools contribute to a good lab. Hoffman and Snyder will share their experiences from two decades of hard-core testing.

9 a.m.

John Chambers, president and CEO Cisco, Keynote

John Chambers, president and CEO of Cisco Systems, will open Interop with

this keynote address in which he will talk about how to unleash the power of your network to drive productivity, collaboration and innovation. Business processes have moved from produc-



John Chambers

tion-based systems to transaction-based systems to interactive systems. With the growing focus on interaction, the need for highly secure networks is mounting.

Chambers "will address the critical role that IT plays in enabling secure, high-value interactions between people and machines in the real-time world of today," the company says. Chambers will talk about Cisco's architectural approach to security and how an "Intelligent Information Network sets the foundation for organizations to move with speed and flexibility for competitive advantage on a global scale."

9 to 10 a.m.

Testing Endpoint Security Options

This is the first of several sessions that will give attendees a detailed look at the results of testing done in *Network World* labs. Network World Lab Alliance members Mandy Address, president of ArcSec Technologies, and Rodney Thayer, principal investigator with security research firm Canola & Jones, are testing endpoint security devices that include everything from personal firewalls to host intrusion-prevention systems to policy enforcement products. Their first round of tests focused on proactive products that identify and block malicious traffic (www.nwfusion.com, DocFinder: 6822). Now they're testing endpoint policy enforcement products. This session will take attendees under the covers of the testing and provide perspective on the endpoint security market.

10:15 to 11:15 a.m.

Is the End of Unsolicited E-mail in Sight, or will SPIM, SPAM and SPIT Spin Entirely Out of Control?

There's no shortage of innovation when it comes to fighting the proliferation of spam. During the past year or so, network managers have had a growing pool of anti-spam product choices. But the onslaught of unsolicited e-mail continues, and spammers are branch-

ing out into instant messaging, short messaging services and IP telephony. Phillip Hallam-Baker, principal scientist at VeriSign, and John Veizades, product manager at Mirapoint, lead this session in which they will try to answer the question, "Can you get a handle on spam?"

11:30 a.m. to 12:30 p.m.

Leveraging Infrastructure Data for Performance Management

Infrastructure management tools provide tons of information to track system availability and troubleshoot problems. Ever thought of putting the data to wider use? In this session Wilson MacDonald, vice president of product management at Concord Communications; Bob Quillin, vice president of marketing and product management at Network Physics; and Joel Trammell, CEO and co-founder of NetQoS will discuss how network managers can use infrastructure measurement data to keep tabs on network performance metrics such as application response time.

2 to 3:15 p.m.

VoWi-Fi – Revolution in the Making

These days, network managers are getting increasingly comfortable with VoIP and Wi-Fi technologies. But what about combining the two? VoIP over Wi-Fi (VoWi-Fi) stands to be the next big thing as businesses look for ways to integrate disparate wireless voice and data systems. Keith Shaw, senior editor of product testing at

Network World, will moderate this panel discussion with David Newman, president of Network Test and a Network World Test Alliance member; Joel Vincent, director of product marketing at Meru Networks; and Ben Guderian, director of market strategy and industry relations at SpectraLink. The panel will address issues such as when cost-effective cellular/VoWi-Fi phones will be available, what users can expect from service providers when it comes to VoWi-Fi and how VoWi-Fi might lead to the end

of the tethered desktop phone.

2 to 3:15 p.m.

Performance Enhanced ROI: Choosing Between Application and Network-Centric Solutions

When looking for ways to boost the performance of your network, you can come at it from two angles: the network

iLabs hones in on SIP, secure client access and open source

As the hands-on experimental proving ground for how well emerging technologies interoperate, the InteropNet Labs (iLabs), sponsored by *Network World*, is a series of demonstrations not to be missed. The iLabs showcase products and technologies that address real engineering challenges in a live, vendor-neutral, standards-based arena. This year's three testing initiatives focus on:

- Interoperability of more than 70 Session Initiation Protocol-based products (IP phones, softphones, SIP proxies and firewalls) from more than 30 vendors.
- Security parameters that allow for safe network access for wired and wireless clients using key standards including WPA2/IEEE 802.11i, IEEE 802.1X, Extensible Authentication Protocol and RADIUS.
- Deploying a full suite of open source software components (routing, security, e-mail, voice, video and collaboration) in several scenarios to pinpoint the issues that arise when they are forced to coexist with commercial products that provide the same services.

The iLabs demonstrations will be located on the show floor and are accessible daily during exhibit hours.



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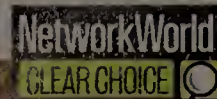


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angle and the application angle. But which is better? Application-centric approaches boost specific applications, but are limited in scope.



Johna Till Johnson

Network-centric tools might not provide as much application performance improvement as an application-based tool, but they can be applied to any application that traverses the network. Join Johna Till Johnson, president and chief research officer at Nemertes Research, *Network World* columnist and author of *Network World's* Data Center newsletter; Lynn Nye, president of APM Advisors; and Peter Sevcik, president NetForecast, as they discuss how to decide which approach — or whether a combination of the two — is best for you.

3:30 to 4:30 p.m.

Overcoming the Barriers to Regulatory Compliance

Complying with new federal regulations regarding data management and retention is putting a strain on all IT shops. Analysts say that regulatory compliance will cost companies more than they spent in advance of Y2K. Don Kleinschnitz, vice president of Symantec's Secure Enterprise Administration product delivery, will lead this session that will outline what the issues are when it comes to regulatory compliance and how network managers can deal with them.

WEDNESDAY MAY 4

PICK THE DAY

5p.m.

Network World Survivor, Las Vegas

If you're a reality TV buff, you won't want to miss this. *Network World* Editorial Director John Gallant will lead this take-off on CBS's popular reality series. Gallant will be joined by an all-star cast of *Network World* columnists and test experts who will decide which technology companies and products will survive to play a role in the enterprise IT environment of tomorrow.

Join Paul McNamara, *Network World* associate news editor and author of the 'Net Buzz column; McNamara's back page mate, Mark Gibbs, author of *Network World's* BackSpin and Gearhead columns; Johna Till Johnson; and Network World Lab Alliance stalwarts Joel Snyder, founder of Opus One, and David Newman, president of Network Test. They — and you as an audience member — will decide which providers and technologies have what it takes to keep up with the fast-changing IT landscape and who is too slow, too weak and too worried about the installed base to survive the major changes ahead.

8:30 a.m. to 4:30 p.m.

Workshop: Running IT as a Business

Tired of having IT looked at as a cost center? This workshop, led by James Metzler, vice president of

Ashton, Metzler & Associates, will provide tips on how to get IT better connected with the customers it serves and the business it supports. This highly-interactive workshop will show network managers how IT can be the foundation of business success and then lay out a framework for running IT as a business. The workshop will draw on real-world experiences of its attendees.

10:15 to 11:15 a.m.

Improving Application Performance: User case studies

Getting your network to perform at a top-notch level is your mission every day. But often the performance tools at hand don't work as well as promised. During this session, David Dulfer, director of global internet services at Motorola; Mark Garton, disaster recovery/business continuity team leader at O'Reilly Auto Parts; and Irving Tyler, CIO at Quaker Chemical, talk about problems they've faced with performance issues and the processes and technologies they've used to overcome them.

11:30 a.m. to 12:30 p.m.

Optimizing Your Network for Convergence: Lessons Learned from IT Executives

Are you thinking about deploying VoIP or undertaking a broader convergence project? Your first step should be taking a good, hard look at your network. What does your network support today and how much capacity is

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available for new applications? Mike Banic, vice president of marketing at Peribit Networks; Hal Clark, senior business product manager at Avaya; and Irving Tyler, CIO at Quaker Chemical, will help you avoid the pitfalls of having a network that's not up to the task or having one that's over-provisioned. They'll show you how to conduct a baseline assessment, suggest who should do it and explain how the results can help you get your network ready for convergence.

2 to 3 p.m.

Testing Voice over WLAN Gear

In this second session of the *Network World* testing track, David Newman, a Network World Test Alliance partner and president of Network Test; and Tom Alexander, CTO of test gear maker VeriWave, will give attendees an inside view of how they conducted the tests and the results they got. The tests looked at how well wireless access points and switches from Aruba Wireless Networks, Cisco, Chantry Networks and Colubris Networks handled voice traffic (DocFinder: 6823). Newman and Alexander also will discuss the underlying importance of correlating application-layer and data link-layer test results to get a complete picture of wireless LAN gear performance.

THURSDAY MAY 5

PICK OF THE DAY

9 to 10 a.m.

Testing Anti-Spam Products

In this final session of the Network World Testing Track, Joel Snyder, Network World Lab Alliance partner and a senior partner at Opus One, will offer an in-depth look at his nearly exhaustive tests of anti-spam products. In his second round of groundbreaking tests, Snyder evaluated 35 software, appliance and service offerings (DocFinder: 6824).

After all that testing, Snyder has tons of data — not to mention plenty of scars. In this session, Snyder will detail the best way to test anti-spam products, including how to accurately gauge spam catch rates and how to determine false positives when checking out the performance of these products.

8:30 a.m. to 4:30 p.m.

Workshop: Optimizing End-to-End Application Performance

Getting the most out of applications isn't as easy as it used to be now that network managers are faced with complex, multi-tiered application environments that include typical servers and databases, as well as Web-based delivery systems. Today, end users are far-flung and tap into applications with a range of end-user devices. At the same time, the performance of Web-based applications is becoming increasingly important to the overall success of business. Alistair Croll, chief

strategy officer at Web performance monitoring firm Coradant, leads this daylong workshop that takes a look at what can hang up application delivery and presents strategies for getting the best performance out of these network-based systems.

10:15 to 11:15 a.m.

Managing Wireless LANs: New Options for the Enterprise

You've deployed a wireless LAN, but now how to manage it? Craig Mathias, principal with the Farpoint Group, chairs this panel discussion. Rich Mironov, vice president of marketing at Air Magnet; Masood Garahi, CTO at Roving Planet; and Keerti Melkote, vice president of marketing and product management at Aruba Wireless Networks, will discuss planning, provisioning, monitoring and controlling WLANs. The trend these days is to integrate wireless and wireline management tools. Panel members will talk about WLAN approaches and discuss how the integration of wireless and wireline management packages will affect deployments.

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The Network World 200 THE BIGGEST NETWORK COMPANIES

The Network World 200

A sector-by-sector analysis begins at right, plus:

- **The NW200**, alphabetical listing. **Page 61.**
- **SafeNet** tops among fast-growth companies. **Page 62.**
- **Not cashing out**: Top 5 cash holders. **Page 62.**
- **The NW200**: ranked by revenue, company listings. **Page 66.**
- **NW200 compare-o-matic**: An online tool for sorting the list based on your own criteria and comparing two or more vendors side by side. www.nwfusion.com, **DocFinder: 6835.**
- **Novell's one-two punch**. With \$1.7 billion in cash and ranking among the top 25 most profitable companies on the NW200, Novell has more than a fighting chance with its Linux-plus-management strategy. **Page 72.**
- **Juniper: Secured & assured?** Despite its presence as one of the fastest-growing vendors on the NW200, Juniper is struggling to gain enterprise respect. **Page 74.**
- **Masters of the virtual world**. Financially strapped NW200 vendors find cost-cutting nirvana with large-scale telework deployments. **Page 76.**

10 start-ups to watch. From automating IT functions to managing user identities, the hot technologies offered by these young companies may one day land them on the NW200. **Page 80.**

A building year. Most of last year's 10 Start-ups to Watch have made solid progress. We chart their accomplishments. **Page 84.**

Signature Sign-off: 'The Network Maverick' and the Next Big Thing. Mergers and acquisitions in the network industry could be fodder for a reality TV show, with network executives as the judges. **Page 86.**

Cover illustration by Giacomo Marchesi

The Signature Series

The Network World 200 is one of six bimonthly issues providing insights, opinions, and information on the biggest trends shaping the networked world. Look for the You Issue, all about your job, salary, future and free time, coming July 25.

SCALING UP

Revenues climb for a second year at North America's largest network companies, and a record number of NW200 vendors are in the black.

■ BY JOHN DIX

If 2003 was the year the Network World 200 bounced back after the upheaval at the turn of the century, then 2004 was the test to see if the recovery was real.

It was.

North America's largest public network companies stumbled in 2001, took a nose dive in 2002, began a comeback in 2003 and last year grew stronger: Collective revenue for the NW200 was up 9%, and the group generated a respectable \$63 billion in profits.

What's more, some 65% of the companies ended the year in the black, a historic high in the 11 years of the NW200. On average, only about half the companies on the list muster that feat in any given year (and in the bleak days of 2001, only 31% of the companies eked out a profit).

Another sign that the industry is back: Mergers and acquisition activity heated up. Billion-dollar-plus deals included Juniper's acquisition of security vendor NetScreen Technologies for \$4 billion; Symantec's acquisition of storage management company Veritas Software for \$13.5 billion; the \$35 billion Sprint/Nextel merger; and IBM's sale of its PC business to Lenovo in China for \$1.25 billion.

Smaller but significant deals included EMC's \$625 million acquisition of VMware (completed in '04); Computer Associates' \$430 million acquisition of identity management vendor Netegrity; Gateway's \$200 million purchase of eMachines; and Symantec's \$370 million acquisition of anti-spam vendor Brightmail.

Cisco is the perennial acquisition bellwether and the company was up to its old tricks, spending \$824 million last year to land 12 companies, up from only four acquisitions in 2003. But that needs to be put in perspective: Cisco bought 23 companies in the halcyon days of 2000 for a whopping \$12 billion.

Some of the vendor jockeying last year stemmed from seemingly diametrically opposed IT goals: On the one side buyers are striving to simplify operations through automation, make better use of resources and extend access to those resources to other organizations. On the other they are contending with stringent new security, accountability and compliance rules.

Buyers' headaches add up to opportunity for vendors, and many of the players spent the year scrambling to align themselves properly.

Core infrastructure

Any discussion about the health of the network industry has to start with Cisco (No. 12 on the NW200). The bursting of the bubble left the company treading water in terms of sales — down 15% in fiscal 2002 and flat in 2003 — but management squeezed out costs, ramping up profits to \$1.9 billion and \$3.6

billion, respectively.

It didn't back off its cost-cutting ways when sales picked up in fiscal 2004: When revenue climbed 17% to \$22 billion, profits jumped 22% to reach \$4.4 billion, a profit margin of 20%.

Cisco's '04 fiscal year ended in July though, so the NW200 uses trailing 12 month (TTM) data for a more current view. (All NW200 companies with fiscal years not ending in November, December or January are ranked using TTM.) When examined that way, Cisco's results are even more impressive. Revenue was up

A rebound with legs

The recovery that started in 2003 proved to have staying power.

NW200 combined revenue (in billions)



19% to \$23.6 billion compared with the same period in '03, and profits were up 43% to \$5.4 billion, a profit margin of 23%.

A highlight for the company last year was the unveiling of the CRS-1, a high-end backbone router that had been in development for more than two years. The 1.2T bit/sec CRS-1 is important to Cisco's efforts to combat upstarts that are trying to skim the cream of the lucrative top-end router business.

One of those upstarts has become more than a minor thorn in Cisco's side: Juniper, No. 55 on the list. And what a year this company had. Revenue jumped 90% to \$1.3 billion, largely on the back of router sales. In the fourth quarter alone sales more than doubled to \$430 million compared with the same period in '03.

Of that fourth-quarter revenue, \$300 million was attributed to the company's core network business and \$79 million to sales of security gear from newly acquired NetScreen. But it is that security portfolio that ultimately might help Juniper push deeper into core enterprise accounts (see related story, page 74).

The network world is turning virtual, says Scott Kriens, Juniper CEO, in a company newsletter. "Network security is crucial as virtual networks become a critical foundation of global, extended businesses."

An NW200 staple missing from this year's list is Nortel, which delayed the filing of its annual report with the Securities and Exchange Commission and is in the process of restating its results for 2001, 2002 and 2003.

CEO Bill Owens, who took over the reins of the troubled company last May, is bullish about the fundamentals. "Nortel puts more into R&D on a per capita and per dollar of sales basis than any company in the industry, and we have the most diverse range of products in the industry," he said in an interview soon after he was hired. But he admitted that the enterprise "has not been the DNA of Nortel."

To help get the company back on track, Owens last month appointed Gary Daichendt as president and COO in charge of the carrier and enterprise businesses. Daichendt had been Cisco's executive vice president of worldwide operations.

Another long-struggling infrastructure stalwart is 3Com, which hasn't posted a profit since 2000 (or even a profitable quarter in the last 20).

No. 30 on the NW200 in 1999 with \$5.7 billion in revenue, 3Com today is one-eighth that size, No. 77 on the list with sales of \$669 million (TTM) and a loss of \$189 million.

Sales in the last quarter of the calendar year (ending in November) were the most meager posted in two and a half years — \$151 million. North America sales alone were down 29%, which CEO Bruce Claflin attributes to the decline of the 10/100M bit/sec Ethernet switching business, where competitors have started a pricing war.

To fight back 3Com is betting on:

- Its partnership with China's Huawei Technologies, a joint venture that delivered its first fruits last year, the 8800, a modular switch with a terabit backplane. The Huawei-3Com venture is still ramping up and losing money in the process — some \$7.5 million for 3Com in the first full year of operation — but revenue climbed to \$261 million.

- The \$430 million acquisition of intrusion-prevention system (IPS) vendor TippingPoint Technologies, which was announced in late December. 3Com plans to take TippingPoint's products international and imbed the IPS technology into core infrastructure products.

In the meantime 3Com has to survive. And last month it announced it laid off 220 more people, 11% of its workforce.

One company giving 3Com trouble at the low-end of the market is Netgear, which grew 28% last year. In the process, it vaulted over high-end vendor Extreme Networks to land at No. 99 on the list with sales of \$383 million and profits of \$23 million.

Netgear CEO Patrick Lo attributes part of that success to its line of unmanaged gigabit switches. In fact, the Dell'Oro Group says Netgear was the leading supplier of unmanaged Gigabit switch ports in 2004.

Safety in security

Of the other core network categories, one of the hottest last year was security. Almost all the pure-play security vendors fared well in the revenue category. Check Point shot up 19% to \$515 million, RSA Security grew 18% to \$308 million, and Internet Security Systems climbed 18% to reach \$290 million.

One exception was McAfee, which saw revenue slide 3% to \$911 million as the company rejiggered its product portfolio. McAfee, No. 68 on the NW200, sold off its Sniffer line in July (which resulted in a \$179 million revenue reduction) and then in October acquired Foundstone, a supplier of vulnerability management products and services.

The big kahuna in security is Symantec, which has been on a tear, growing revenue 42% to \$2.4 billion (TTM). Symantec (No. 41) completed six acquisitions last year, but of course the biggest news was the announcement in December that it was merging with storage management vendor Veritas.

Explaining the rationale for the merger, Veritas CTO Mark Bregman told a Goldman Sachs Technology Investment Symposium in February: "As we were helping customers . . . turn their IT infrastructure into a shared resource . . . and deliver IT as a service, one of the nagging questions that kept coming up was . . . 'What are you doing to protect us against malicious attacks?' . . . We saw this [merger] as the best opportunity to accelerate our strategy."

Systems shuffle

In the world of systems the two biggest stories of late are the ouster of Carly Fiorina as HP CEO and Dell's continued march on the enterprise.

Perhaps lost in the whole Fiorina flap is that HP managed to grow a respectable 10% last year to \$82 billion. What brought her down, of course, is the profit picture.

HP, No. 2 on the NW200, finished the year with \$3.5 billion in profits, a relatively modest 4% profit margin. By means of comparison, No. 1 IBM made \$8.4 billion on sales of \$96 billion, a 9% return.

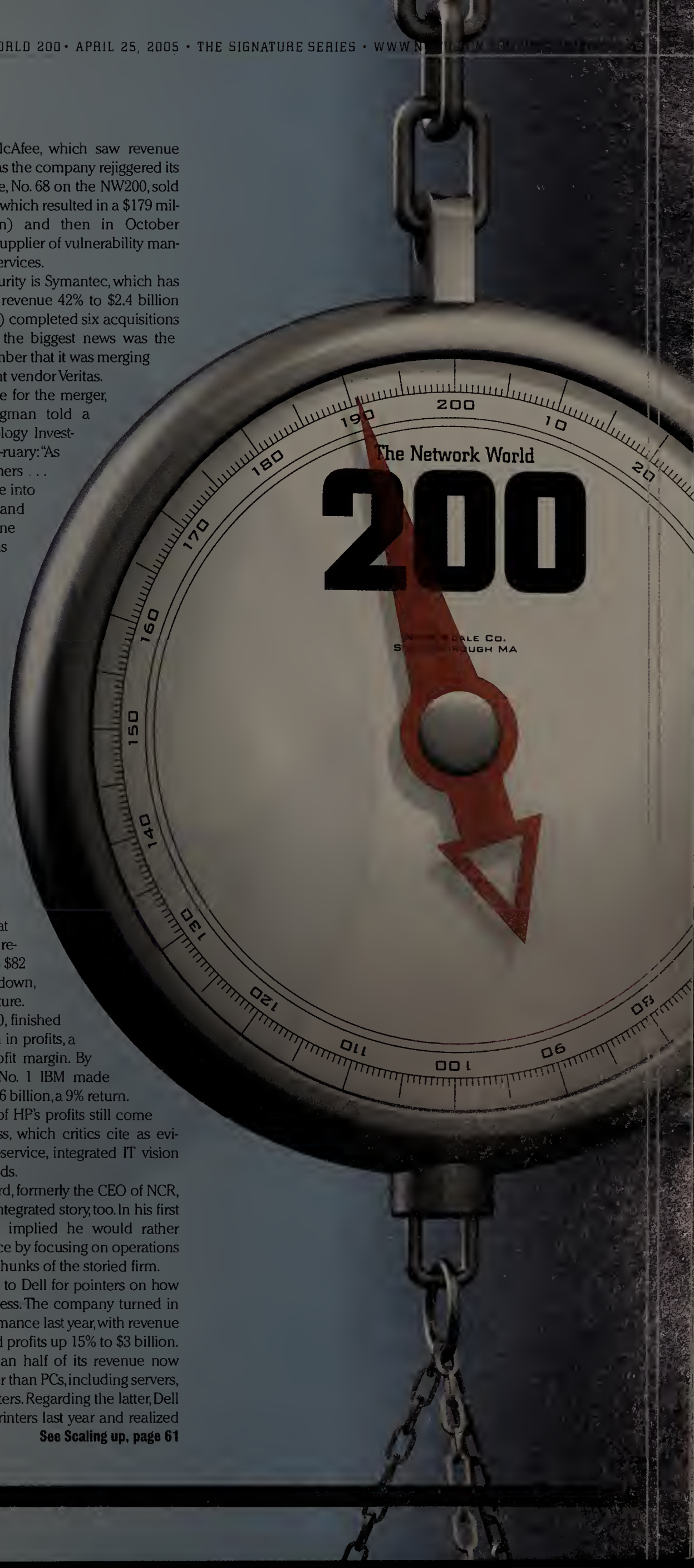
What's more, the bulk of HP's profits still come from the printer business, which critics cite as evidence that Fiorina's full-service, integrated IT vision wasn't delivering the goods.

But new CEO Mark Hurd, formerly the CEO of NCR, seems to believe in the integrated story, too. In his first press conference, Hurd implied he would rather improve HP's performance by focusing on operations rather than by selling off hunks of the storied firm.

Perhaps Hurd will look to Dell for pointers on how to run an efficient business. The company turned in yet another stellar performance last year, with revenue up 19% to \$49 billion and profits up 15% to \$3 billion.

Dell says that more than half of its revenue now comes from sources other than PCs, including servers, storage systems and printers. Regarding the latter, Dell says it sold 5.2 million printers last year and realized

See Scaling up, page 61





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Scaling up

continued from page 57

\$1.3 billion in revenue.

It is cagier about server and storage numbers, and prefers to reference those figures as percentage gains. For example, it says server sales grew 25% last year and revenue

from external storage systems was up 27%, while the underlying numbers might be relatively small.

Sun, No. 20 on the list, doesn't have heady growth numbers to crow about, but can take solace in the fact that the company has pulled out of the nose dive it has been in since the bubble burst. Revenue peaked in

fiscal 2001 at \$18 billion, then dropped 32% in '02 and another 8.5% in '03. In fiscal '04, revenue was down only 2% to \$11 billion.

And when looked at on a trailing 12 month basis — the company's fiscal year ends in June — the picture is even brighter: Sales pulled up even with the same period in 2003. And while losses continue, they are

growing smaller: \$106 million over the last 12 months vs. \$376 million for fiscal '04.

At the other end of the spectrum is IBM, the top dog of the NW200, which has largely insulated itself from the forces influencing the rest of the system players by focusing on services. IBM Global

See Scaled up, page 64

NETWORK WORLD 200 ALPHABETICAL

2004 rank	Company	2004 rank	Company	2004 rank	Company	2004 rank	Company
77	3Com	4	Dell	105	Lawson Software	95	Quest Software
155	Actuate	149	Digi	33	Level 3	18	Qwest
85	Adaptec	140	Digital River	29	Lexmark	177	Raindance
69	ADC Telecommunications	175	DocuCorp	23	Lucent	116	RealNetworks
49	Adobe Systems	120	Dot Hill Systems	90	Macromedia	134	Red Hat
86	Adtran	181	DSL.net	128	Manugistics Group	148	Redback Networks
88	Advanced Digital Info.	172	E.piphany	32	Maxtor	62	Research in Motion
151	Agile Software	52	EarthLink	68	McAfee	110	RSA Security
126	Akamai Technologies	164	EasyLink Services	93	McData	129	SafeNet
24	Alltel	14	Electronic Data Systems	13	MCI	79	Savvis Communications
135	Altiris	25	EMC	74	McLeodUSA	6	SBC
48	American Power Conversion	107	Emulex	75	Mercury Interactive	45	Scientific-Atlanta
38	Anixter	106	Enterasys Networks	141	MicroMuse	26	Seagate
22	Apple	165	Entrust	7	Microsoft	161	Secure Computing
112	Ariba	122	Epicor Software	9	Motorola	137	SeeBeyond
113	Ascential Software	138	Equinix	114	MRV	54	Siebel Systems
101	Aspect	159	Exabyte	146	MTI Technology	125	Sierra Wireless
10	AT&T	199	Extended Systems	156	NaviSite	78	Silicon Graphics
31	Avaya	100	Extreme Networks	27	NCR	145	SonicWall
103	Avocent	131	F5 Networks	180	Neoware Systems	166	SpectraLink
64	BEA Systems	94	FileNet	99	Netgear	11	Sprint
66	Belden CDT	117	Finisar	115	NetIQ	127	Standard Microsystems
16	BellSouth	92	Foundry Networks	192	NetManage	42	Storage Technology
178	BindView Development	34	Gateway	157	Netopia	20	Sun
167	Blue Coat Systems	40	Global Crossing	170	NetScout Systems	35	SunGard Data Systems
51	BMC Software	183	Globix	50	Network Appliance	70	Sybase
109	Borland Software	190	GoRemote Internet Communications	147	Network Equipment Technology	186	Sycamore Networks
174	BroadVision	39	Harris	19	Nextel	41	Symantec
76	Broadwing	2	HP	53	Nextel Partners	47	Symbol Technologies
80	Brocade Systems	123	Hummingbird	59	Novell	65	Tektronix
171	Brooktrout	118	Hypercom	187	Onyx Software	58	Tellabs
173	Captaris	84	Hyperion Solutions	98	OpenText	97	Tibco Software
196	Centra Software	96	i2 Technologies	182	Opnet Technologies	5	Time Warner
83	Check Point	1	IBM	197	Opsware	195	Tumbleweed
108	Ciena	124	Informatica	21	Oracle	28	Unisys
12	Cisco	8	Intel	121	Overland Storage	200	VA Software
73	Citrix Systems	188	Interactive Intelligence	163	Packeteer	60	VeriSign
71	Cognos	160	Interland	61	palmOne	43	Veritas Software
15	Comcast	142	Internap Network Services	176	PalmSource	143	Verity
63	CommScope	111	Internet Security Systems	158	Paradyne Networks	3	Verizon
36	Computer Associates	198	Interphase	46	Perot Systems	133	Vignette
102	Computer Network Technology	91	Inter-Tel	168	Plumtree Software	189	Visual Networks
7	Computer Sciences	132	Intervoice	82	Polycorn	184	Vitria Technology
57	Compuware	139	Interwoven	87	Premiere Global Services	194	Vodavi Technology
67	Comverse Technology	136	iPass	144	Printronic	169	WatchGuard
154	Concord Communications	44	Iron Mountain	104	Progress Software	119	WebEx Communications
89	Covad Group	153	j2 Global	150	Proxim	130	webMethods
179	Critical Path	55	Juniper	81	Qlogic	152	Websense
85	CyberGuard	193	Keynote Systems	30	Qualcomm	37	Western Digital
162	Datalink	191	Lantronix	72	Quantum	56	XO

NOT FLASHING OUT

A mere five NW200 companies are hoarding more than \$109 billion in cash. That's a lot of hot dogs.

■ BY JULIE BORT

Can too much cash be bad? On the one hand, a whopping figure in a company's cash and short-term investment column indicates strong financial health. On the other, cash hoarders often face criticism that they could be doing more with their stockpile, or that they should be more generous with their dividends. Still, what company wouldn't want to suffer this dilemma?

When it comes to members of the Network World 200, the top five holders of cash and short-term investments sit atop \$109 billion. Here are some comparisons that put their cash hoards in perspective.

The most cash-rich NW200 companies . . . and spending comparisons

\$109 billion	Combined cash hoard of HP, IBM, Intel, Microsoft and Motorola.
\$91 billion	Gross domestic product of Singapore, 2003 (Source: Worldbank.org, which has not yet published '04 data).
\$61 billion	Amount Microsoft reported in cash and short-term investments for '04.
\$60 billion	Global dietary supplement industry (Source: Nutrition Business Journal).
\$14 billion	Amount Intel and HP each reported in cash and short-term investments for '04.
\$11 billion	Amount Motorola and IBM each reported in cash and short-term investments for '04.
\$7 billion	Total disaster relief funds for tsunami relief and Sept. 11, combined. (\$6 billion tsunami relief promises plus \$997 million spent in Sept. 11 disaster aid. Sources: United Nations and Red Cross).
\$2.5 billion	Net worth of Donald Trump, No. 215 on Forbes 2004 World's Richest People.
\$1.8 billion	Amount Americans paid for hot dogs at super markets in 2004. (Source: National Hot Dog and Sausage Council).
\$580 million	Combined price paid for the 10 most expensive paintings ever sold (by Cezanne, Picasso, Renoir, Van Gogh. Source: SoYouWannaKnow.com).
\$94.1 million	Combined cost required to purchase 15 private islands in the Bahamas, ranging from 7 acres to 370 acres (Source: PrivateIslandsOnline.com).

2004 cash and short-term investments (\$M)	Company name	2004 revenue rank
60,592	Microsoft	7
14,061	Intel	8
13,600	HP	2
10,708	Motorola	9
10,570	IBM	1

SAFENET TOPS AMONG FAST-GROWTH COMPANIES

Security vendor moves from No. 3 on fastest-growing NW200 list in '03 to No. 1 this year.

■ BY JENNIFER MEARS

Security firm SafeNet has seen business boom over the last few years as organizations of all sizes recognize the importance of steeling their networks against intruders. The company, founded 22 years ago by two engineers from the U.S. government's National Security Agency, had a particularly strong year in 2004, thanks in large part to its acquisition of Rainbow Technologies, which tripled the company's revenue base, according to SafeNet CEO Tony Caputo.

Revenue jumped 205% to \$202 million in 2004, up from \$66 million a year earlier. Those results made SafeNet the fastest-growing Network World 200 company and pushed it from No. 175 on the NW200 in 2003 to No. 129 this year. Even without the acquisition, SafeNet's growth has averaged about 45% per year over the past few years, Caputo notes.

SafeNet specializes in encryption technology including chips, hardware and software for uses as broad as SSL acceleration, encryption for classified applications and VPNs. It also integrates its technologies into custom packages for customers. About half the company's business comes from government agencies — not surprising given its NSA roots.

"Customers are becoming more attuned to the need for strong security and they are beginning to be able to differentiate between what we are providing and what a lot of other companies provide, which is good security, but not government- or world-class, financial-institution-grade security," Caputo says.

SafeNet intends to pursue more enterprise customers, where demand for high-level network security is growing as a result of changing business practices and government regulations, Caputo says.

"Through the late '90s and early into this decade, we've focused on reaching enterprise customers through our technology partners, but that's likely to change as we go forward," Caputo says. "We are a much stronger company; we have good revenue size, a strong balance sheet. We're profitable, and a larger percentage of our growth going forward will come from the general enterprise market."

The fastest-growing NW200 companies

Company	2004 revenue (\$M)	Rev '03-'04 % chg	NW200 rank
SafeNet	202	205%	129
Research in Motion	1,156	145%	62
Savvis Communications	617	144%	79
Broadwing	672	114%	76
Opsware	38	109%	197
Sierra Wireless	211	108%	125
CommScope	1,153	101%	63
Juniper	1,336	90%	55
OpenText	385	90%	98
Altiris	167	68%	135

Fastest-growing NW200 companies with revenue of more than \$500 million

Research in Motion	1,156	145%	62
Savvis Communications	617	144%	79
Broadwing	672	114%	76
CommScope	1,153	101%	63
Juniper	1,336	90%	55
Belden CDT	966	55%	66
ADC Telecommunications	891	53%	69
Apple	9,763	45%	22
Symantec	2,427	42%	41
Network Appliance	1,483	38%	50

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000 27000 28000 29000 30000 31000 32000 33000 34000 35000 36000 37000 38000 39000 40000 41000 42000 43000 44000 45000 46000 47000 48000 49000 50000 51000 52000 53000 54000 55000 56000 57000 58000 59000 60000 61000 62000 63000 64000 65000 66000 67000 68000 69000 70000 71000 72000 73000 74000 75000 76000 77000 78000 79000 80000 81000 82000 83000 84000 85000 86000 87000 88000 89000 90000 91000 92000 93000 94000 95000 96000 97000 98000 99000 100000

to early, already the night is
affectionate self-enclosedness
and early morning are precious
small childhood moments by
word of memory, not face
to face as the artist, 1982. New and
familiar, it is a small, intimate
gesture.

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RIVERBED

Scaled up

continued from page 62

Services revenue was \$46 billion last year, almost half of the company's total sales, and 48% more than hardware revenue of \$31 billion.

Having achieved the strategic switch to

services, CEO Sam Palmisano writes in the annual report that 2005 is the time for "small s and big E: less focus on strategic development, maximum push on execution."

While other computer makers are being tempted by the massive consumer market — which Apple used to grow revenue 45% last year — Palmisano says emphatically:

"IBM is an enterprise-focused company. It is not our strength or intention to participate directly in consumer markets."

Nor is IBM pushing into applications, as some prognosticators once presumed it would. The company views its role as process integrator.

That's just as well for Oracle, Microsoft,

Siebel Systems and others because, to hear Oracle tell it, there are too many application players as it is. The company just reduced that number by one through its long, hostile takeover of PeopleSoft.

Oracle's fiscal year ends in May, but even the end-of-year, TTM view doesn't include the addition of PeopleSoft revenue because the deal wasn't finalized until January. Nonetheless, the company once again reached the \$10 billion sales mark after achieving that in 2001 and then slipping back in 2002 and 2003.

Oracle is one of two software companies in the elite NW200 \$10 billion-plus club. The other is Microsoft (No. 7), which is almost four times Oracle's size and growing at a respectable 12% year over year (TTM).

But Microsoft's most remarkable characteristic is still its ability to generate profits. For the third year in a row the company tops the profitability list, taking home almost \$10 billion in profits (TTM), \$1.5 billion more than IBM, which is two and a half times the size of the Redmond mint.

Telecom tumble

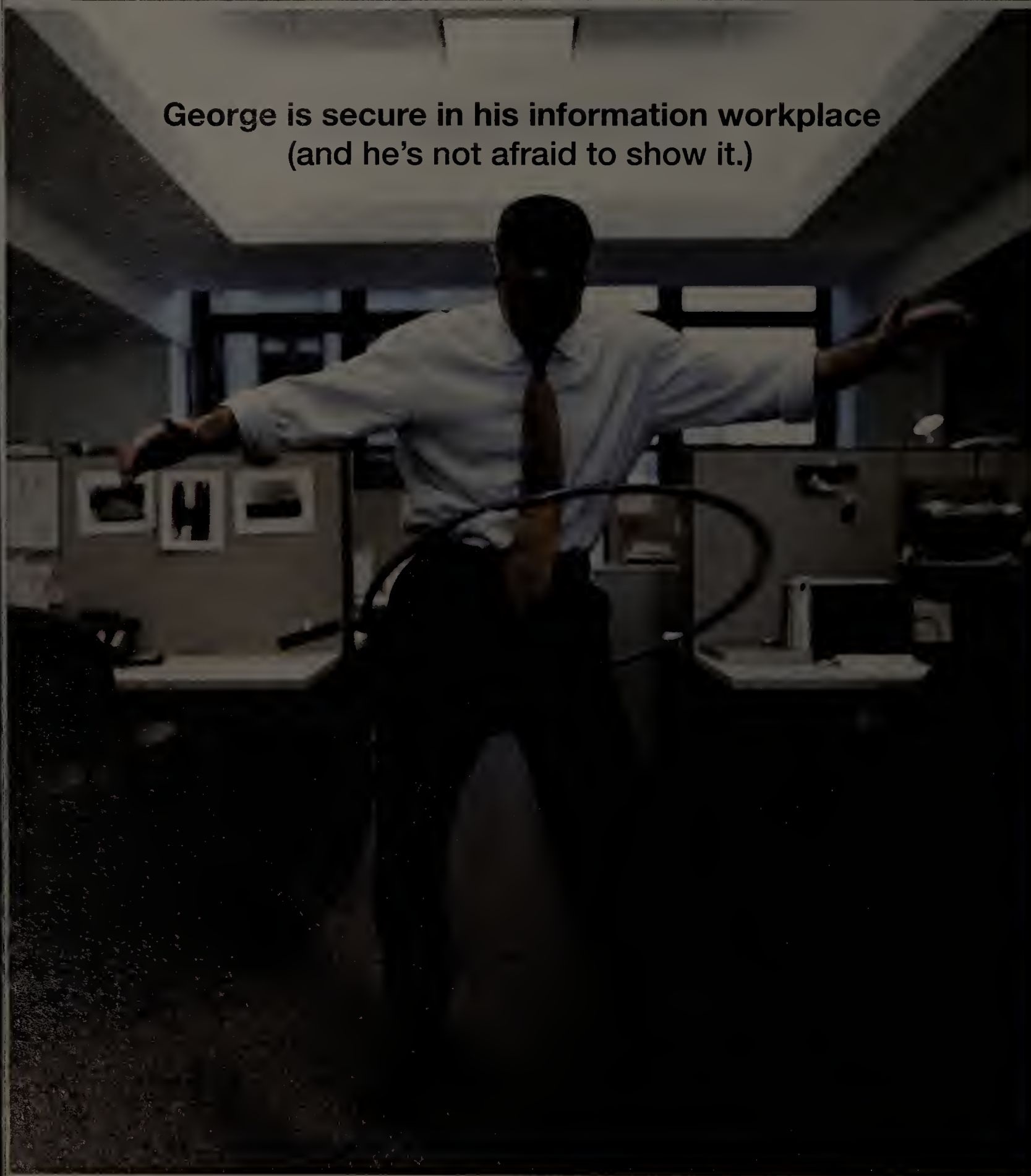
Profits are one thing that eluded many of the big telecom companies last year. The four largest losses posted by NW200 companies were from AT&T (\$6.5 billion), MCI (\$4 billion), Qwest (\$1.8 billion) and Sprint (\$1 billion).

Viewed that way, the recent flurry of merger activity comes as no surprise. When this list is compiled next year, Sprint and Nextel will be one, AT&T will be part of SBC and MCI will have been swallowed by either Verizon or Qwest.

If Verizon ends up with MCI, it will create a company with revenue around \$90 billion, a colossal new force in the telecom world with assets that span the country.

So, while 2004 did show that the network industry's rebound is for real, it hasn't benefited all comers. More consolidation and realignment are in the cards, and this time next year the NW200 will be a different animal, proving once again it is a living, breathing thing. ■

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How we did it

Revenue and profit data for companies whose fiscal years ended in November '04, December '04 or January '05 came from 10K statements filed with the Securities and Exchange Commission or, in cases where those were unavailable, directly from the companies.

For companies with fiscal years ending in a month other than November, December or January, we gathered revenue and profit data from their last four quarters of financial reports, taken from 10K and 10Q statements filed with the SEC. In this way, we are comparing the financial results of the same calendar year for all companies, otherwise known as "trailing 12 months."

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The miracles of science™



Rank 2004	2003	Company name	2004 revenue			2004 profit/loss			% of rev.	2004 market cap \$M**	Cash & invest \$M	Long- term debt \$M	Number of employees			Rev. per employee \$M	Ticker	FY ends	Year inc.	
			\$M*	% Δ	'00-'04 CAGR	Profit rank	\$M	% Δ					'00-'04 CAGR	2004	% Δ					'00-'04 CAGR
1	1	IBM	96,293	8%	3%	2	8,430	11%	1%	9%	148,080	10,570	14,828	369,277	4%	0%	260,761	IBM	Dec	1911
2	2	HP	81,845	10%	11%	8	3,504	27%	3%	4%	57,360	13,600	4,408	151,000	6%	11%	542,020	HPQ	Oct	1947
3	3	Verizon	71,283	6%	2%	3	7,831	155%	-8%	11%	97,330	4,547	35,674	210,000	3%	-4%	339,443	VZ	Dec	1983
4	4	Oeli	49,205	19%	9%	10	3,043	15%	7%	6%	94,380	9,807	505	55,200	20%	7%	891,395	OELL	Jan	1987
5	6	Time Warner	42,089	6%	39%	9	3,364	27%	31%	8%	79,690	6,139	20,703	84,900	6%	57%	495,748	TWX	Dec	2001
6	5	SBC	40,787	1%	-4%	5	5,887	-31%	-5%	14%	76,960	859	21,231	162,000	-4%	-6%	251,772	SBC	Dec	1963
7	8	Microsoft	38,474	12%	10%	1	9,996	28%	1%	26%	263,960	60,592	0	57,000	4%	8%	674,982	MSFT	June	1975
8	9	Intel	34,209	13%	0%	4	7,516	33%	-7%	22%	144,340	14,061	703	85,000	7%	0%	402,459	INTC	Dec	1968
9	10	Motorola	31,323	35%	0%	15	1,532	72%	3%	5%	36,630	10,708	4,578	68,000	-23%	-14%	460,632	MOT	Dec	1928
10	7	AT&T	30,537	-12%	-8%	200	-6,469	-	0%	-	14,970	3,698	8,779	47,600	-23%	-22%	641,534	T	Dec	1885
11	11	Sprint	27,428	5%	3%	197	-1,012	-	-	-	31,350	4,556	15,916	59,900	-10%	-7%	457,896	FON	Dec	1938
12	14	Cisco	23,579	19%	0%	6	5,387	43%	12%	23%	115,580	5,764	0	34,000	0%	0%	693,500	CSCO	July	1984
13		MCI	20,690	-15%	-10%	199	-4,002	-	-	-	8,170	5,504	5,909	40,000	-29%	-14%	517,250	MOP	Dec	1983
14	13	Electronic Data Systems	20,669	0%	2%	40	158	-	-33%	1%	10,430	3,592	3,168	117,000	-11%	-1%	176,658	EDS	Dec	1962
15	15	Comcast	20,307	11%	33%	17	970	-70%	-14%	5%	45,060	2,007	20,093	74,000	9%	16%	274,419	CMCSA	Dec	2001
16	12	BellSouth	20,300	0%	-5%	7	4,758	22%	2%	23%	46,690	696	0	63,000	-17%	-10%	322,222	BSL	Dec	1983
17	18	Computer Sciences	14,261	10%	7%	19	589	20%	7%	4%	8,660	754	1,805	90,000	0%	9%	158,458	CSC	Mar	1959
18	17	Qwest	13,809	-3%	0%	198	-1,794	-	-	-	6,870	1,770	16,690	41,000	-13%	-9%	336,805	Q	Dec	1997
19	20	Nextel	13,368	24%	19%	11	3,000	99%	-	22%	30,250	1,814	8,527	19,000	12%	-1%	703,579	NXTL	Dec	1987
20	19	Sun	11,230	0%	-10%	181	-106	-	0%	-	13,610	3,639	1,145	35,000	-3%	-2%	320,857	SUNW	June	1982
21	22	Oracle	10,556	9%	0%	12	2,947	19%	-15%	28%	64,790	9,436	162	41,658	2%	0%	253,397	ORCL	May	1986
22	25	Apple	9,763	45%	8%	22	508	263%	4%	5%	34,950	6,448	0	13,426	23%	9%	727,171	AAPL	Sept	1977
23	23	Lucent	9,121	5%	-19%	14	1,838	-	-	20%	12,230	3,685	4,810	31,800	-8%	-24%	286,824	LU	Sept	1995
24	24	Alltel	8,246	3%	6%	16	1,046	-21%	-12%	13%	16,630	485	5,352	18,598	-7%	-7%	443,386	AT	Dec	1983
25	26	EMC	8,229	32%	-1%	18	871	76%	-13%	11%	29,250	2,714	128	22,700	14%	-1%	362,533	EMC	Dec	1979
26		Seagate	6,129	-8%	0%	27	324	-56%	0%	5%	9,300	1,476	738	40,000	-7%	0%	153,225	STX	June	2000
27	29	NCR	5,984	7%	0%	29	290	400%	10%	5%	7,310	750	307	28,500	-2%	-3%	209,965	NCR	Dec	1884
28	27	Unisys	5,821	-2%	-3%	75	39	-85%	-30%	1%	2,300	661	898	36,400	-2%	0%	159,909	UIS	Dec	1986
29	30	Lexmark	5,314	12%	7%	20	569	29%	15%	11%	10,010	1,567	150	13,400	14%	1%	396,552	LXK	Dec	1990
30	32	Qualcomm	5,065	27%	13%	13	1,880	100%	80%	37%	58,850	6,124	0	7,600	3%	4%	666,447	QCOM	Sept	1985
31	31	Avaya	4,246	11%	-11%	28	317	637%	19%	7%	5,840	911	251	14,900	-12%	-14%	284,966	AV	Sept	2000
32	33	Maxtor	3,796	-7%	7%	184	-182	-	0%	-	1,330	482	383	13,656	1%	10%	277,997	MXO	Dec	1982
33	34	Level 3	3,712	-8%	26%	189	-458	-	-	-	1,410	668	5,067	4,500	-3%	-6%	824,889	LVT	Dec	1985
34	35	Gateway	3,650	7%	-17%	193	-568	-	0%	-	1,520	644	300	1,900	-74%	-40%	1,920,913	GTW	Dec	1986
35	37	SunGard Data Systems	3,556	20%	16%	23	454	23%	16%	13%	9,110	675	509	13,000	30%	11%	273,529	SDS	Dec	1982
36	36	Computer Associates	3,476	9%	-8%	54	82	-	-17%	2%	16,010	3,325	2,471	15,300	-4%	-6%	227,190	CA	Mar	1974
37		Western Digital	3,276	12%	11%	38	164	3%	-	5%	2,510	493	43	17,376	51%	19%	188,547	WDC	June	1970
38	38	Anixter	3,275	25%	-1%	56	78	85%	0%	2%	1,350	53	412	5,600	12%	-1%	584,857	AXE	Dec	1967
39	39	Harris	2,783	24%	8%	39	159	93%	-	6%	4,490	230	401	10,900	7%	2%	255,358	HRS	June	1926
40		Global Crossing	2,487	-10%	-4%	187	-340	-	-	-	323	365	396	3,600	-28%	-26%	690,833	GLBC	Dec	1997
41	43	Symantec	2,427	42%	25%	21	533	66%	34%	22%	14,850	2,944	0	5,300	23%	15%	457,850	SYMC	Mar	1982
42	41	Storage Technology	2,224	2%	2%	35	191	28%	-	9%	3,410	1,134	11	7,100	0%	-1%	313,239	STK	Dec	1969
43	42	Veritas Software	2,042	17%	11%	26	411	18%	-	20%	9,740	2,553	520	7,587	16%	10%	269,128	VRTS	Dec	1998
44		Iron Mountain	1,818	21%	13%	51	94	11%	-	5%	3,865	32	2,439	14,500	12%	7%	125,351	IRM	Dec	1951
45	44	Scientific-Atlanta	1,790	12%	-4%	32	239	42%	-3%	13%	4,250	1,316	8	7,5,						

*Trailing 12 months for fiscal years not ending in November, December or January.

**Captured March 25, 2004.

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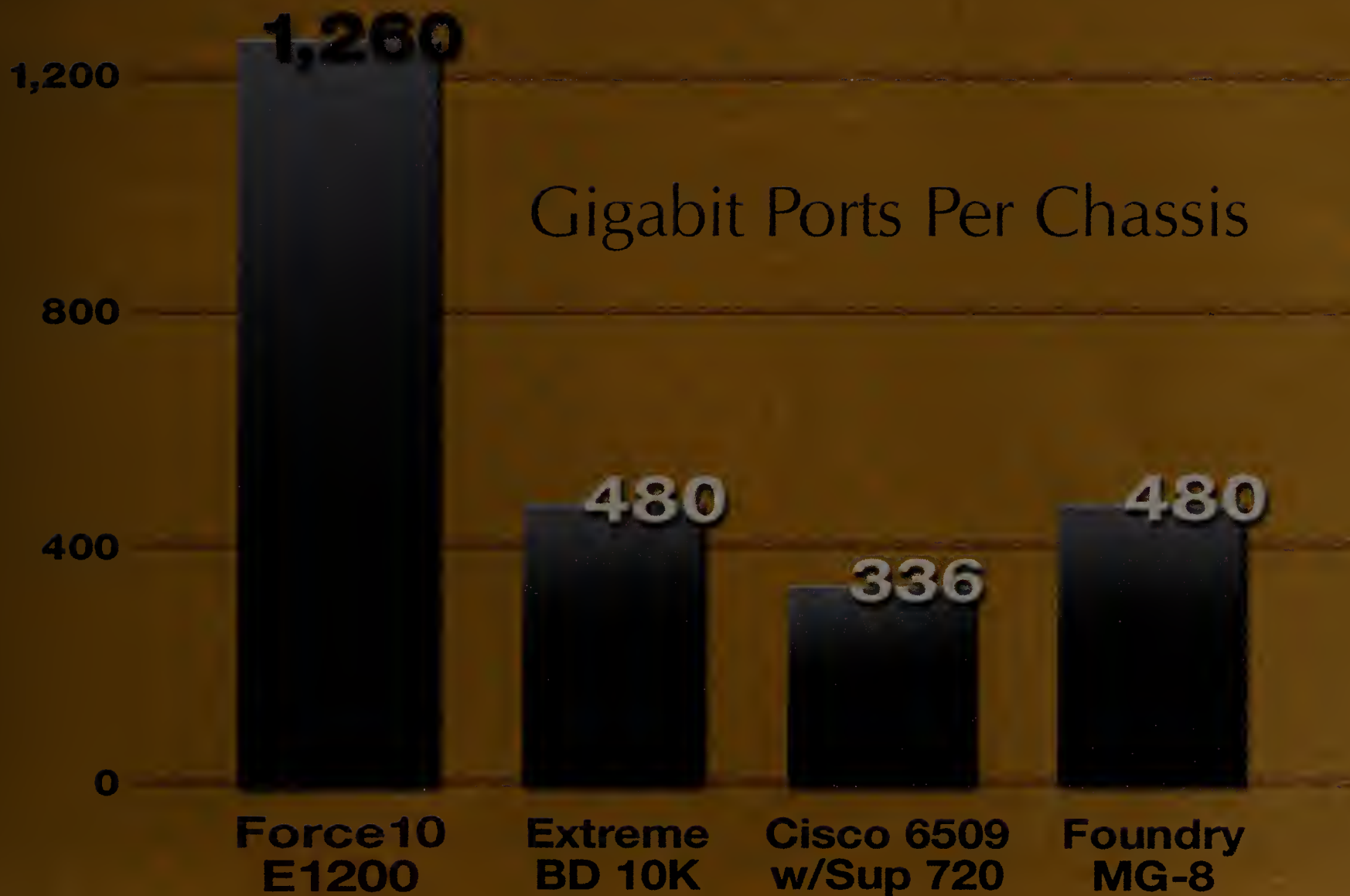
*As of August 2004, SecureLinx SLC is the only console manager with a NIST-certified implementation of Advanced Encryption Standards as specified by FIPS-197 (Federal Information Processing Standards). © 2005 Lantronix, Lantronix is a registered trademark, and SecureLinx and Remote KVM are trademarks of Lantronix, Inc.

Rank 2004 2003 Company name			2004 revenue			2004 profit/loss					2004 market cap			Long-term debt \$M	Number of employees			Rev. per employee \$M	Ticker	FY ends	Year inc.
			\$M*	'03-'04 % Δ	'00-'04 CAGR	Profit rank	\$M	'03-'04 % Δ	'00-'04 CAGR	% of rev.	\$M**	\$M	'03-'04 % Δ		'00-'04 CAGR						
68	80	McAfee	911	-3%	5%	33	225	220%	-	25%	3,670	524	0	2,950	-20%	-3%	308,658	MFE	Dec	1989	
69	68	ADC Telecommunications	891	53%	-24%	59	71	-	-38%	8%	1,660	513	400	7,500	32%	-20%	118,800	ADCT	Oct	1989	
70	66	Sybase	789	1%	-4%	60	68	-22%	-1%	9%	1,670	480	0	3,568	-3%	-6%	221,002	SY	Dec	1989	
71	71	Cognos	771	20%	10%	45	128	52%	15%	17%	4,010	439	0	2,904	-1%	6%	265,617	COGN	Feb	1969	
72	63	Quantum	760	-9%	-12%	150	-9	-	0%	-	486	290	160	1,809	-11%	-11%	420,143	DSS	Mar	1980	
73	73	Citrix Systems	741	26%	10%	43	132	4%	7%	18%	4,010	234	0	2,656	41%	14%	279,050	CTXS	Dec	1989	
74	62	McLeodUSA	716	-18%	-5%	194	-625	-	-	-	36	50	728	2,400	-23%	-26%	298,417	MCLD	Dec	1992	
75	77	Mercury Interactive	686	35%	17%	52	85	104%	6%	12%	4,030	614	804	2,659	15%	13%	257,821	MERQ	Dec	1989	
76	96	Broadwing	672	114%	58%	183	-152	-	-	-	305	225	52	1,661	37%	3%	404,744	BWNG	Dec	1997	
77	69	3Com	669	-9%	-29%	186	-189	-	0%	-	1,350	1,274	-	1,925	-42%	-29%	347,289	COMS	May	1989	
78	61	Silicon Graphics	630	-4%	-21%	128	0	-	-	0%	308	106	262	2,655	-29%	-17%	237,233	SGI	June	1981	
79	107	Savvis Communications	617	144%	27%	185	-186	-	-	-	117	55	114	1,858	87%	26%	331,982	SVVS	Dec	1998	
80	75	Brocade Systems	613	12%	6%	61	65	-	-7%	11%	1,560	491	348	1,038	-16%	11%	590,369	BRCD	Oct	1995	
81	76	Qlogic	543	5%	11%	41	144	10%	21%	27%	3,720	768	0	819	11%	17%	662,962	QLGC	Mar	1992	
82	81	Polycorn	540	29%	4%	77	35	55%	-1%	7%	1,680	214	0	1,437	21%	22%	375,958	PLCM	Dec	1990	
83	80	Check Point	515	19%	4%	31	248	2%	2%	48%	5,180	158	0	1,344	12%	4%	383,452	CHKP	Dec	1993	
84		Hyperion Solutions	503	-8%	-1%	64	55	62%	31%	11%	1,770	405	0	2,472	11%	0%	203,341	HYSL	June	1991	
85	79	Adaptec	485	11%	-4%	73	39	14%	-17%	8%	524	517	260	1,512	-1%	-10%	320,787	ADPT	Mar	1981	
86	85	Adtran	455	15%	0%	58	75	22%	-9%	17%	1,310	182	50	1,627	1%	-1%	279,536	ADTN	Dec	1985	
87	87	Premiere Global Services	449	18%	8%	72	42	61%	-	9%	785	26	68	2,230	13%	-2%	201,512	PGI	Dec	1991	
88		Advanced Digital Info.	447	0%	7%	116	3	-83%	-51%	1%	520	245	0	1,147	-8%	9%	390,003	ADIC	Oct	1983	
89	86	Covad Group	429	10%	22%	174	-61	-	-	-	326	151	125	1,141	4%	-13%	376,159	COVO	Dec	1996	
90	92	Macromedia	422	20%	2%	62	59	76%	8%	14%	2,490	341	0	1,213	12%	4%	347,997	MACR	Mar	1992	
91	88	Inter-Tel	417	12%	1%	84	27	-5%	-	6%	681	205	0	2,022	11%	3%	206,179	INTL	Dec	1969	
92	84	Foundry Networks	409	2%	2%	68	48	-36%	-11%	12%	1,420	443	0	658	12%	3%	621,739	FORN	Dec	1996	
93	82	McData	400	-5%	10%	161	-21	-	0%	-	309	210	170	1,008	-1%	11%	396,488	MCOTA	Jan	1991	
94	89	FileNet	398	9%	0%	83	29	169%	-5%	7%	962	334	0	1,607	-7%	-2%	247,391	FILE	Dec	1982	
95	98	Quest Software	389	28%	19%	70	47	119%	-	12%	1,340	134	0	2,257	30%	10%	172,558	QSFT	Dec	1987	
96		i2 Technologies	389	-21%	-10%	135	-1	-	-	-	161	278	317	2,044	-17%	-19%	190,477	ITWH	Dec	1988	
97	105	Tibco Software	387	47%	9%	71	45	293%	-	12%	1,670	474	50	1,360	52%	8%	284,721	TIBX	Nov	1997	
98	114	OpenText	385	90%	24%	90	22	-18%	13%	6%	847	102	66	2,105	76%	39%	183,129	OTEX	June	1991	
99	100	Netgear	383	28%	17%	89	23	79%	238%	6%	452	142	0	269	30%	22%	1,424,309	NTGR	Dec	1996	
100	93	Extreme Networks	376	10%	-2%	96	15	-	-7%	4%	707	216	200	831	-7%	4%	452,971	EXTR	June	1996	
101	90	Aspect	370	2%	-9%	66	52	81%	-	14%	630	203	0	1,254	-3%	-14%	295,404	ASPT	Dec	1985	
102	91	Computer Network Technology	366	3%	16%	182	-111	-	-	-	139	54	124	na	0%	0%	-	CMNT	Jan	1983	
103	99	Avocent	365	20%	-57%	94	18	-53%	-	5%	1,300	240	0	912	27%	10%	400,499	AVCT	Dec	2000	
104	97	Progress Software	363	17%	6%	81	32	19%	-1%	9%	946	191	2	1,552	12%	2%	233,674	PRGS	Nov	1981	
105	94	Lawson Software	357	5%	1%	117	3	-25%	-1%	1%	575	206	0	1,579	-6%	-4%	226,092	LWSN	May	1975	
106	83	Enterasys Networks	357	-14%	-14%	176	-71	-	-	-	310	119	0	1,150	-18%	-15%	310,330	ETS	Dec	1983	
107	95	Emulex	350	3%	11%	190	-530	-	0%	-	1,540	125	376	522	32%	27%	671,211	ELX	June	1979	
108	103	Ciena	327	17%	-21%	195	-770	-	0%	-	1,040	898	690	1,651	-9%	-10%	198,087	CIEN	Oct	1992	
109	101	Borland Software	310	5%	10%	103	11	-	-11%	4%	651	221	0	1,361	0%	8%	227,442	BORL	Dec	1983	
110	106	RSA Security	308	18%	2%	79	35	136%	-30%	11%	1,190	290	0	1,144	9%	1%	268,800	RSAS	Dec	1986	
111	109	Internet Security Systems	290	18%	8%	85	26	33%	7%	9%	912	211	0	1,200	5%	0%	241,578	ISSX	Dec	1994	
112	112	Ariba	280	23%	-8%	196	-908	-	-	-	522	130	0	1,686	100%	0%	166,071	ARBA	Sept	1996	
113	120	Ascential Software	272	46%	-22%	98	15	-5%	-	5%	1,090	481	0	970	13%	-23%	280,288	ASCL	Dec	1986	
114	110	MRV	272	14%	-3%	153	-11	-	-	-	326	81	112	1,330	6%	-13%	204,254	MRVC	Dec	1988	
115	102	NetIQ	270	-3%	22%	159	-16	-	-	-	602	294	0	1,322	-3%	20%	204,294	NTIQ	June	1995	
116	115	RealNetworks	267	32%	2%	162	-23	-	-	-	966	364	100	819	10%	-5%	325,664	RNWK	Dec	1994	
117	121	Finisar	263	56%	11%	179	-101	-	-	-	311	102	248	2,826	39%	62%	93,050	FNSR	Apr	1987	
118	111																				

*Trailing 12 months for fiscal years not ending in November, December or January.

**Captured March 25, 2004.

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Rank 2004	2003	Company Name	2004 revenue			2004 profit/loss				2004 market cap \$M**	Cash & invest \$M	Long- term debt \$M	Number of employees			Rev. per employee \$M	Ticker	FY ends	Year fnd.	
			\$M*	'03-'04 % Δ	'00-'04 CAGR	Profit rank	\$M	'03-'04 % Δ	'00-'04 CAGR				% of rev.	2004	'03-'04 % Δ					'00-'04 CAGR
135	143	Altiris	167	68%	75%	95	17	19%	-	10%	686	183	0	750	25%	21%	222,087	ATRS	Dec	1998
136	128	iPass	166	22%	36%	92	19	37%	-	11%	374	152	0	402	22%	11%	413,729	IPAS	Dec	1998
137	127	SeeBeyond	164	19%	7%	127	0	-	-	0%	284	73	0	814	21%	1%	201,226	SBYN	Dec	1998
138	132	Equinix	164	39%	66%	175	-69	-	-	-	977	90	86	468	9%	5%	349,724	EQIX	Dec	1998
139	135	Interwoven	160	44%	4%	164	-24	-	-	-	324	134	0	696	0%	-5%	230,443	IWOV	Dec	1995
140		Digital River	154	52%	38%	78	35	106%	-	23%	1,040	292	195	727	45%	12%	212,006	DRIV	Dec	1994
141		MicroMuse	148	9%	0%	110	6	-9%	-14%	4%	353	125	0	532	-7%	1%	278,748	MUSE	Sept	1989
142	126	Internap Network Services	145	4%	16%	160	-18	-	-	-	192	46	12	370	5%	-14%	390,665	IP	Dec	1998
143	134	Verity	141	25%	2%	100	13	-2%	-21%	9%	373	129	0	524	20%	8%	269,210	VRTY	May	1998
144	130	Printronic	131	2%	-5%	123	1	-26%	4%	1%	104	42	14	828	-3%	-4%	157,793	PNX	Mar	1974
145	147	SonicWall	126	33%	13%	134	-1	-	0%	-	343	253	0	335	-3%	5%	375,072	SNWL	Dec	1997
146	153	MTI Technology	121	47%	-8%	149	-9	-	-	-	66	14	0	254	-10%	-18%	475,205	MTIC	Mar	1981
147	129	Network Equipment Technology	117	-12%	-6%	143	-6	-	-	-	177	104	26	410	-4%	-13%	286,571	NWK	Mar	1993
148	136	Redback Networks	116	8%	-16%	192	-553	-	-	-	323	43	0	447	-7%	-18%	250,544	RBAK	Dec	1996
149	140	Digi	114	10%	-2%	105	10	39%	-	9%	320	81	0	341	-5%	-8%	335,452	DGI	Sept	1985
150	125	Proxim	114	-23%	2%	171	-49	-	0%	-	28	16	101	353	3%	9%	322,164	PROX	Dec	1979
151	149	Agile Software	112	27%	9%	141	-5	-	-	-	378	197	0	527	21%	13%	212,844	AGIL	Apr	1995
152	154	WebSense	112	37%	45%	86	26	57%	-	23%	1,260	244	0	500	25%	23%	223,718	WBSN	Dec	1994
153	166	j2 Global	106	48%	50%	82	32	-12%	-	30%	1,010	66	1	202	15%	9%	526,450	JCOM	Dec	1995
154	139	Concord Communications	106	2%	3%	191	-534	-	0%	-	194	159	86	443	-4%	0%	239,702	CCRD	Dec	1990
155	138	Actuate	105	0%	-1%	124	1	-	-25%	1%	169	47	0	480	-10%	-5%	218,035	ACTU	Dec	1993
156	157	NaviSite	103	17%	3%	166	-26	-	-	-	48	2	45	559	52%	3%	183,626	NAVJ	July	1996
157	146	Netopia	102	9%	2%	155	-12	-	-	-	84	24	0	261	-15%	-5%	392,123	NTPA	Sept	1986
158	155	Paradyne Networks	102	26%	-16%	139	-3	-	-	-	98	44	0	375	-1%	-15%	272,768	PDYN	Dec	1993
159	145	Exabyte	102	3%	-14%	152	-10	-	-	-	32	444	6	182	-43%	-25%	560,720	EXBT	Dec	1985
160	137	Interland	99	-7%	19%	178	-99	-	0%	-	35	26	3	615	-19%	-28%	161,169	ILND	Aug	1995
161	162	Secure Computing	93	23%	22%	101	13	55%	-	14%	287	52	0	378	1%	1%	247,032	SGUR	Dec	1994
162	148	Datalink	93	2%	-8%	138	-3	-	0%	-	30	13	0	147	14%	-5%	634,578	DTLK	Dec	1993
163	164	Packeteer	92	27%	18%	99	15	32%	-	16%	531	82	0	266	29%	9%	323,206	PKTR	Dec	1996
164	142	EasyLink Services	92	-9%	12%	108	8	-85%	-	8%	50	14	13	na	0%	0%	-	EASY	Dec	1996
165	151	Entrust	91	3%	-9%	125	1	-	-	1%	230	97	0	491	-3%	-15%	185,248	ENTU	Dec	1996
166	168	SpectraLink	90	26%	11%	104	11	34%	11%	12%	269	27	0	358	10%	4%	251,425	SLNK	Dec	1990
167	181	Blue Coat Systems	88	56%	0%	115	4	-	-	4%	297	44	0	251	29%	-4%	351,422	BUSI	Apr	1996
168	167	Plumtree Software	84	18%	19%	151	-10	-	-	-	149	65	2	399	14%	8%	210,897	PLUM	Dec	1997
169	158	WatchGuard	83	4%	6%	147	-8	-	-	-	101	77	0	304	-4%	1%	272,260	WGRD	Dec	1996
170	171	NetScout Systems	82	18%	-6%	118	3	-	-25%	3%	133	73	0	343	0%	7%	239,394	NTSC	Mar	1994
171	163	Brooktrout	80	8%	-11%	136	-1	-	-	-	146	53	0	308	-3%	-4%	260,627	BRKT	Dec	1994
172	144	E.piphany	79	-18%	-10%	157	-14	-	-	-	273	149	0	407	-5%	-16%	194,823	EPNY	Dec	1995
173	152	Captaris	78	-6%	1%	129	0	-99%	-60%	0%	119	33	0	413	31%	-3%	188,949	CAPA	Dec	1982
174	150	8roadVision	78	-11%	-28%	91	21	-	-	26%	63	42	7	337	-8%	-33%	231,466	BVSN	Dec	1993
175	160	DocuCorp	77	-1%	7%	114	4	-18%	29%	5%	90	8	5	400	-1%	2%	192,715	DOCU	July	1997
176		PalmSource	77	-1%	0%	131	0	-	0%	-	141	60	0	292	-5%	-	262,325	PSRC	May	2001
177	170	Raindance	75	7%	33%	140	-3	-	-	-	136	43	0	248	2%	-5%	303,504	RNDG	Dec	1997
178	174	BindView Development	73	8%	-3%	142	-5	-	-	-	162	33	0	550	5%	-6%	132,545	BVDV	Dec	1990
179	165	Critical Path	71	-2%	-12%	172	-52	-	-	-	16	23	9	355	-15%	-19%	200,203	CPTR	Dec	1997
180	177	Neoware Systems	70	17%	40%	111	6	-10%	-	8%	166	53	0	114	-4%	18%	610,561	NWRE	June	1995
181	169	DSL.net	68	-4%	31%	169	-36	-	-	-	35	7	15	140	-20%	-18%	488,571	BIZ	Dec	1998
182	182	Opnet Technologies	63	21%	17%	113	5	1%	15%	7%	172	81	0	307	16%	15%	296,446	OPNT	Mar	1988
183	180	Globix	63	9%	3%	165	-24	-	-	-	58	16	72	240	15%	-22%	263,896	GBXX	Sept	1999
184	156	Vitria Technology	62	-23%	-14%	153	-16	-	-	-	113	79	0	285	-22%	-16%	277,140	VITR	Dec	1994
185	192	CyberGuard	60	58%	24%	132	-1	-	-	-	239	14	0	290	107%	29%	266,000	CGFW	June	1994
186	194	Sycamore Networks	58	58%	-33%	168	-33	-	0%	-	969	769	0	353	-5%	-12%	165,263	SOMR	July	1998
187	178	Onyx Software	58	-1%	-14%	137	-3	-	-	-	33	14	0	283	-14%	-16%	263,654	ONXS	Dec	1994
188	183	Interactive Intelligence	55	7%	15%	126	1	-	-	2%	79	15	0	340	1%	-1%	162,115	ININ	Dec	1994
189	190	Visual Networks	53	34%	-10%	130	0	-	-	0%	103	11	8	159	2%	-13%	631,032	VNWK	Dec	1993
190		GoRemote Internet Communications	50																	

*Trailing 12 mos. for fiscal years not ending in November, December or January. **Captured March 25, 2004.

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NW200 COMPANY IN-DEPTH

NOVELL'S ONE-TWO PUNCH

With \$1.7 billion in cash and ranking among the top 25 most profitable companies on the NW200, Novell has more than a fighting chance with its Linux-plus-management strategy.

BY DENI CONNOR

Open source alone won't save Novell from oblivion.

That's the message Jack Messman, who took over the company reins in 2001, has been hammering home over the past few years. Just as important, he says, are new services that will run on top of the NetWare and Linux operating system kernels.

"Our value is up the stack from the kernel with services such as identity management, security and systems management that we add on," Messman says. "Those are the areas where we will see revenue opportunities in the future."

As much as it is focusing on open source, Novell (No. 59 on the Network World 200) cannot put NetWare behind it, he says. "Our legacy operating system, NetWare, [currently] accounts for virtually all the revenue for new software licenses," he explained last month in an interview at the company's BrainShare annual user conference.

NetWare licensing revenue has been on the decline since 1996 — the first year Windows became the predominant server operating system worldwide. That year, Novell reported operating system licensing revenue of \$754 million, down from slightly more than \$1 billion in 1995. By the end of 2002, NetWare licenses accounted for about 30% of worldwide revenue, or just \$319 million. A 17% drop in 2003 left the company with \$265 million in license revenue, while another 10% decline brought the figure to \$238 million for 2004.

Today, Messman promises the company is in the midst of a "transformation," propelled by the dual open source and services initiatives launched two years ago.

Novell got serious about open source in 2003, when executives formalized the company's strategy for migrating the NetWare installed base to Linux rather than seeing those users won over by Windows. Before 2003, Novell had dabbled in open source, mostly in making its eDirectory and ZENworks management packages work with Linux.

As part of its new open source strategy, Novell launched the acquisitions of SuSE Linux and Ximian, a Linux desktop vendor, and unveiled plans for Nterprise Linux

Services, a NetWare variant that would run on the Linux kernel.

Nterprise Linux Services evolved into plans for the dual-kernel Open Enterprise Server (OES), which layers Novell's file and print, identity management and security services on top of a NetWare or SuSE Linux kernel. OES, which became available last month, gives Novell's large base of NetWare users a migration path to open source Linux. When users deploy OES, they can decide which services will run on which kernel. For example, they might want to run file and print services on the NetWare kernel and applications such as Oracle or PeopleSoft on the Linux kernel.

"OES is designed as a platform to allow our installed base to easily transition from NetWare to Linux, should they choose to migrate," Messman says in the company's 2004 annual report. "Our intention is that by providing customers with a clear migration path to our Linux products, we mitigate the risk that customers may defect."

Novell also offers the Novell Linux Desktop and a security appliance that runs on Linux. The company announced these, and an open source collaboration project called Hula, at LinuxWorld in February.

Evidence of transformation?

In the first quarter of fiscal 2005, which ended Jan. 31, Novell reported some value accruing from its SuSE Linux acquisition, which closed in January 2004. The company reported \$15 million in SuSE Linux license revenue.

Still, at less than half of market leader Red Hat's \$39.2 million in subscription revenue for the period ending Nov. 30, 2004, Messman found SuSE's revenue disappointing. "I am not pleased with our Linux sales this quarter," Messman said during an earnings call with financial analysts.

According to research firm Netcraft, Red Hat (No. 134) held almost a 50% market share in 2004, compared with SuSE's 12%. But Red Hat, which reported subscription revenue of \$127 million and services revenue of \$172 million for the four quarters



Our value is up the stack from the kernel with services such as identity management, security and systems management that we add on.

■ JACK MESSMAN, CEO, NOVELL

ending Nov. 30, 2004, doesn't provide software and services "farther up the application stack" as does Novell, Messman says. He's hoping Novell's efforts there will help close the gap — layered on top of the dual NetWare/Linux kernel, those services might save Novell from obscurity and create a sustainable revenue stream, he says.

In the first quarter of 2005, identity management and the ZENworks management package accounted for 34% of Novell license revenue of about \$165 million. Novell says it expects to enhance its systems management offerings via IT asset management software from the Tally Systems acquisition, announced last month.

Novell is moving in the right direction with its open source/network services combination, says William Hurley, senior analyst at Enterprise Strategy Group. "Novell needs

to fuse its Linux- and identity message into one unified message that highlights the value of the secure platform driven across an organization and across all workloads."

"Even though Novell's revenue performance in the first quarter was disappointing, with \$1.7 billion cash on hand, the company has a lot of room to maneuver in terms of adding to and providing support services" for OES and SuSE Linux, Hurley adds.

If user attitude at BrainShare is any indication, Messman might indeed pull off a successful transformation. As Dan Tesenair, senior network engineer for Health First, says, "Our director has said that he wants every system in our network to go to Linux." That has the Melbourne, Fla., healthcare provider migrating 40 NetWare servers and a number of Solaris servers to Novell's OES running SuSE Linux. ■

Novell and the NW200

- Revenue rank: 59, at \$1.2 billion.
- Profit rank: 25, at \$412 million.
- Cash and short-term investments: \$1.7 billion.

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NW200 COMPANY IN-DEPTH

JUNIPER: SECURED & ASSURED?

Despite its presence as one of the fastest-growing vendors on the NW200, Juniper is struggling to gain enterprise respect.

BY TIM GREENE

One year has passed since Juniper closed the books on its acquisition of VPN and intrusion-prevention vendor NetScreen Technologies, but the company has yet to parlay its year-old enterprise security presence into a broader corporate business.

Juniper's game plan calls for users of NetScreen's popular SSL and IPSec VPN and intrusion-prevention products to consider Juniper elsewhere in the enterprise. Toward that end, Juniper last summer introduced its first business-class WAN routers, the J-Series. But as of early April, Juniper had no J-Series account references it could share publicly. The company says only that a major bank, which uses NetScreen security products, has bought the WAN gear.

At the deal's one-year anniversary, industry watchers debate whether Juniper's \$4 billion gambit was a smart move.

From a financial perspective, Juniper's recent sales history has been disappointing, says Nikos Theodosopoulos, a senior financial analyst with UBS Warburg. In the last quarter of last year, revenue from the NetScreen part of the business amounted to \$99 million, he says. That's up from \$94 million posted by NetScreen alone the quarter before Juniper bought it. "The question is," he says, "When will it resume the 30% to 40% growth NetScreen was showing before?" he says.

Overall, though, Theodosopoulos considers Juniper a strong company — and in good shape to acquire the technology it needs. That's just what Juniper intends to do to get VoIP technology. In late March, the company signed a definitive agreement to acquire session border controller vendor Kagoor Networks for \$67.5 million, plus options and other incentives. With Kagoor's technology, Juniper will be able to provide VoIP and other media services to network operators.

Juniper has more than \$1 billion in cash and short-term investments, and its stock trades at higher relative values to its sales than do other network vendors, Theodosopoulos says. Juniper's price-per-earnings ratio is 84.96, while Cisco's is 22.7, for example. Plus, with NetScreen under its wing, Juniper has moved up 15 notches on the Network World 200, to 55.

From a user perspective, Juniper has a long way to go in changing the perception of the company from carrier-only to enterprise, too.

One user sums up the situation: "When I

think of enterprise equipment, I think of a Cisco 6500. I don't think Juniper has anything comparable to that. In my mind, it really hasn't pushed into enterprise [routing] yet," says Jeff Murphy, senior communication system administrator for the University of Buffalo in New York.

No doubt, "we need to increase the awareness of Juniper as an enterprise company and as a security leader," says David Flynn, vice president of Juniper's security products group. "A lot of people say, 'Juniper, great products, great company,' but think of it still as more of a carrier-routing company."

Secured networking

To help shift the perception among enterprise buyers, Juniper has come up with a new tagline for itself — "the leader in secure and assured networking." With this tagline, Juniper hopes to convey that its infrastructure gear secures networks and delivers an assured user experience, Flynn says.

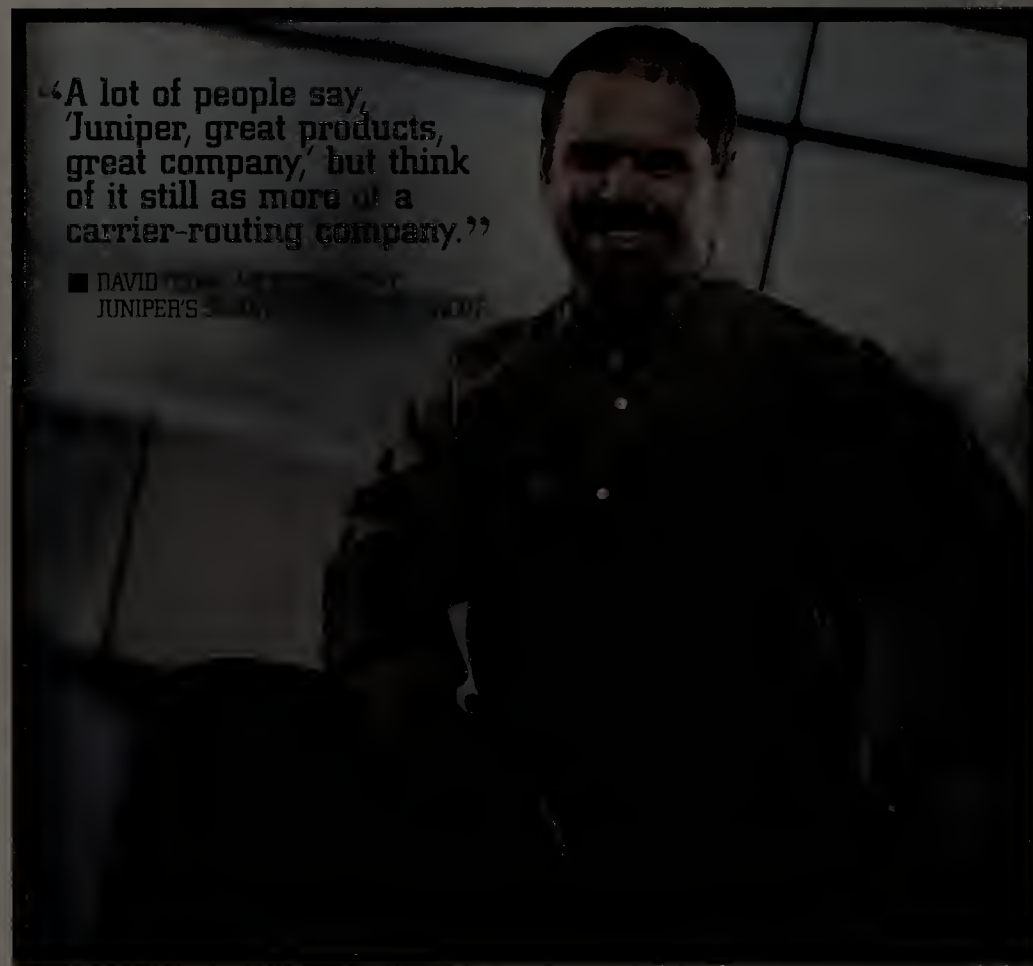
The Juniper-created Infranet Initiative, widely supported among application, computing and infrastructure vendors, fits the tagline. The Infranet Initiative is a framework for creating public networks that support QoS guarantees blended with application types and security for businesses connecting to these networks. But with this as the company's only published road map, speculation about what products Juniper might offer is rampant.

While Juniper says new enterprise products are on the way, it won't describe them or say when they will be ready to ship. That leaves potential business customers and industry watchers uncertain what to expect.

Most are watching how Juniper positions itself against Cisco, and many question how well the Juniper routers possibly could fare against Cisco wares. Juniper doesn't offer the depth of add-on features that Cisco does in the 1700, 2600/2700 and 3600/3700 series routers against which the company is positioning the J-Series, says Joel Conover, an analyst with Current Analy-

"A lot of people say, 'Juniper, great products, great company,' but think of it still as more of a carrier-routing company."

DAVID FLYNN, VICE PRESIDENT OF JUNIPER'S SECURITY PRODUCTS GROUP



sis. For example, the Cisco routers can be software upgraded to become VoIP PBXs, while the Juniper routers can't.

Conover expects the company to enhance its technology lineup to provide a better-rounded corporate networking portfolio. In particular, he sees the lack of VoIP and wireless LAN gear as a big shortcoming. He adds that VoIP will be key to Juniper's enterprise success because corporations are most likely to undertake wholesale network upgrades when they plot their VoIP migrations. If Juniper were to support VoIP, it could win some of the upgrade business, he says. The Kagoor acquisition is a step in the right direction.

Plus, Conover says the Juniper routers aren't inexpensive. A Juniper J4300 ranges from \$2,500 to \$10,000 — not a low-end price. That compares with the six-slot Cisco 3600 router, which sells for \$4,900 to \$6,100. If enterprise users don't want to buy Cisco,

they can get good, solid routers from vendors such as 3Com, Adtran and HP for significantly less than compar-

able Cisco models, Conover says.

Juniper will need to integrate intrusion prevention and other security technology into the routers to set them apart, he says.

But Zeus Kerravala, an analyst with The Yankee Group, says Juniper shouldn't try competing directly against Cisco product for product. That doesn't make sense, he says. "It needs to look at markets where it's known and has proven itself through the carriers," he says.

What Juniper ought to do is focus on supporting next-generation data centers that rely on high availability and secure, non-stop networking, he says. "That's its core competency," Kerravala says. Toward that end, he suggests Juniper needs high-end switches and load balancers along the lines of those made by Force10 Networks and Foundry Networks.

The bottom line

So where does this leave enterprise buyers? UBS Warburg's Theodosopoulos advises customers to hold off awhile before deciding whether Juniper has succeeded in its enterprise play. "It's kind of early to tell. We need at least another year of data." ■

Juniper and the NW200

- Revenue rank: 55, at \$1.3 billion.
- Profit rank: 43, at \$136 million.
- Cash and short-term investments: \$1.1 billion.

0x2b0101 = 12.52
0x2b0101 = 12.48
0x2b0101 = 12.44
0x2b0101 = 12.40
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0x2b0101 = 11.97
0x2b0101 = 11.94
0x2b0101 = 10.25
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MASTERS OF THE VIRTUAL WORLD

Financially strapped NW200 vendors find cost-cutting nirvana with large-scale telework deployments.

BY JOANNE CUMMINGS

Nearly one-fifth of the employed adult U.S. workforce, or 24.1 million people, worked from home at least one day a month in 2004, according to a recent survey by business researcher The Dieringer Research Group. That's an increase of 2.6% over 2003.

Clearly, teleworking isn't just for loners in fuzzy slippers anymore. As enabling technologies such as the Internet, wireless, VoIP and broadband to the home proliferate, so does the number of employees who choose to work virtually. In fact, prominent top executives at Network World 200 companies say they rarely spend much time in a corporate facility. Instead, they work from wherever they are — whether at home, the airport, a customer site or an overseas field office.

Work is what you do, not where you are, they say. Virtual work programs cut costs (especially in office real estate), improve the bottom line, help attract and retain topflight staff, enhance productivity and improve overall competitiveness, they add.

AT&T (No. 10), Sun (No. 20) and Nortel (absent from this year's list because of delayed financial reporting) are virtual-work pioneers. Practicing what they preach, they use such deployments to cut costs in the face of tough financial times. Their virtual work programs range from the sci-fi to the traditional.

Sun: Working anytime, anywhere — on anything

When Sun CIO Bill Vass sets out from the company's headquarters in Menlo Park, Calif., to visit other Sun sites across the country, he packs his entire desktop into his wallet.

This is because he uses an ultra-thin client computer, called a Sun Ray, that runs off of his corporate badge, which is about the size and shape of a credit card.

Sun Rays are diskless, operating-system-less laptop-like devices that can be used with any type of monitor, keyboard or mouse. When a user inserts his corporate ID badge into the Sun Ray, the device communicates to Sun Ray servers at headquarters. Those servers manage all the data and applications, including VoIP soft phones, and simply deliver the GUI to the remote user. The badge contains a small Java chip that handles authentication and encryption.

"At work, I insert my badge into any Sun Ray around, and within 3 seconds, my desktop pops up," Vass says. "When I'm finished at work, I can remove my badge, go home

and insert it in my home Sun Ray. Within 3 seconds, my desktop, which is encrypted with the certificate on my badge, pops up exactly as I left it at work, even with my cursor still blinking on the presentation or the e-mail I was working on."

The result is a mobile workforce that is far more secure, and easier to support and administer than traditional laptop-wielders. The Sun Rays cost just \$200 apiece and require the same amount of technical support as a typical TV, meaning zero, Vass says.

"We save \$15 million a year in administrative costs alone," Vass says, adding that the Sun Rays, which use only 11 watts of power, also save the company \$2.8 million in



power costs. The company garners another \$6.5 million a year by not having to refresh its desktops. "Plus, it's a tremendous leap in security," he says. Remote workers can't become infected with worms or viruses and pass them onto the corporate network, because the Sun Rays have no operating system to infiltrate, he says.

As many as 17,000 of Sun's 33,000 employees work virtually in some capacity, and because any employee can work on any Sun Ray, cubicles at headquarters and other sites are virtual, as well, divided up on

a first-come, first-served basis. "It's a lot like parking — if you get in early, you get your favorite space. If not, you get what's left," Vass says. (Even Sun President Jonathan Schwartz has no permanent office space.)

The setup lets Sun designate 1.5 people per office, a move that saves \$68.9 million a year in real estate costs, Vass says.

Also, as part of this telework program, internally called iWork, Sun offers "edge services." Any employee can log on to Sun's intranet portal via any device — be it a Windows PC, Macintosh, Palm Pilot, Symbian phone, Linux desktop or Solaris desktop. All the employee needs is a user name and password. The portal senses the client device and delivers enough features and functions so the employee can get most work done, Vass says.

"For example, I had parent-teacher conferences at my kids' school recently, and while I was waiting for a teacher, I walked over to a Mac that was in the waiting room

See Virtual, page 78

[Sun's iWork program] is a lot like parking — if you get in early, you get your favorite space. If not, you get what's left.

BILL VASS, CIO, Sun

**SafeNet extends sincere
appreciation to our customers,
employees, and investors
on being named
the nation's fastest growing
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APPLICATIONS - AUTHENTICATION - REMOTE ACCESS - ANTI-PIRACY - LICENSE MANAGEMENT - VPN/SOL

Virtual

continued from page 76

and logged in and started working, doing e-mail, looking at a presentation and checking my expense report," Vass says. "With edge services, I could have done all that on my cell phone. But I'd rather use the bigger screen on the Mac, and it was there. It really lets you work anywhere and use anything."

This all results in increased productivity, as surveyed teleworkers report that they are productive for three hours more per day and give back 60% of their commute time to the company. And Sun's iWorkers are happy with the trade-off. In fact, "73% of worldwide iWorkers said they were very satisfied and really liked their jobs working in this environment, and 80% of U.S. workers said they were very satisfied," Vass says. "That compares with 25% of the American public."

Nortel: Flexible mobility

At Nortel, the key to successful virtual work lies in one word: flexibility.

"We're a global company, so we looked at telework as a way to operate more flexibly with respect to time zones, while allowing our employees a level of flexibility in their work and personal lives," says Nortel CIO Albert Hitchcock, speaking on a conference call from his home office in London.

Today, Nortel reaps huge benefits from its decade-old virtual work program. Annually, the company saves \$22 million in real estate costs and \$18 million in phone charges for teleworkers who use VoIP. The program also chalks up a 15% improvement in productivity annually, primarily because of increased flexibility.

"We're able to recruit people into roles where we may not have a geographical presence, enabling us to get the best people. And employees who work virtually tend to be more flexible in terms of taking evening conference calls and things like that," Hitchcock says. "In return, their managers are more than happy to give them the flexibility to pick up their kids from school in the middle of the day."

Fully 65% of Nortel's workforce works virtually in some capacity, and 8% are full-time teleworkers. The company equips all its employees with a wireless laptop configured with the Nortel Contivity VPN client. This provides IPSec authentication, encryption and protected application access for both voice and data to the corporate network. Each laptop also is configured with

We're a global company, so we looked at telework as a way to operate more flexibly with respect to time zones.

Nortel's Multimedia Communications Server VoIP software for voice and video calls, find-me, instant messaging, videoconferencing and a variety of collaboration tools. With the laptop, employees can connect to Nortel's internal network via dial-up, broadband, 3G wireless or Wi-Fi — from anywhere in the world.

"It's common now for employees to work at a hotel, on a customer premises or in a Starbucks café," Hitchcock says. "Essentially, they can work as if they're sitting at a desk in a Nortel facility, so it really makes no difference where they are."

In the future, Nortel is looking for the program to reap even greater savings in real estate costs.

"On average, 40% of our offices are unoccupied, largely because of this telework technology and the flexibility we're giving our employees," Hitchcock says. So he says Nortel plans to revamp offices so that they revolve around shared spaces and conference rooms, with private cubicles assigned in a hoteling fashion.

"When they get together, teleworkers are looking to collaborate in shared spaces. So why have all these empty cubicles? We're working closely with our real estate organization to further consolidate space," he says.

Nortel also plans to continue using wireless technologies to achieve its virtual goals. Already a big Wi-Fi proponent, Nortel has installed more than 1,000 wireless LAN access points within its corporate buildings so employees can work anywhere on a Nortel site without losing network connectivity. Now it's investing in WiMAX 802.16 and Code Division Multiple Access Release A, both of which are designed to provide broadband-level wireless access.

"In the very near future, we'll have a constantly connected broadband world, and clearly, we want to take advantage of that from an overall employee mobility and productivity standpoint," Hitchcock says.

AT&T: The virtual office

Productivity gains are the sweetest result of AT&T's 12-year-old virtual work program, says Joseph Roitz, who works full time as telework director for the company from his

home office near Little Rock, Ark. On average, he says, AT&T telecommuters report one more productive hour per day than their non-teleworking counterparts — to the tune of \$150 million in increased productivity per year.

"Our teleworkers say they are interrupted less frequently, they're better able to manage their time and they're better able to concentrate. So not only do they have more hours in a day, but we also get more done per hour," says Roitz, adding that he expects the telework program to continue under SBC, although he says planning for that hasn't begun because the sale won't close for another year or two.

Virtual work at AT&T is the norm, not the exception, Roitz says. As many as 90% of the company's managers work virtually in some capacity, with 30% of that total working full time from a virtual office, 40% splitting their time between work and home, and another 20% telecommuting only once or twice per year.

Roitz himself has worked from a virtual office for almost nine years. He was working in AT&T's Atlanta office when his wife was offered a lucrative position in Dallas. Rather than quitting his position at AT&T to make the move, Roitz became a full-time virtual worker.

"It was a real win-win for my boss and for me. He didn't have to bring in somebody new ... and I was able to continue what I was doing from a different location," he says.

AT&T provides a virtual worker with home-office equipment, including a wireless laptop configured with its CallVantage VoIP software, printer, wireless router and cable modem. Users can connect to the corporate network via a VPN connection from all over the globe.

"But we don't provision a home office until someone has given up dedicated real estate in an AT&T building. We don't want to pay for duplicate infrastructure," Roitz says.

That telework policy helps AT&T save upwards of \$30 million in real estate costs annually, he adds.

AT&T also stipulates that virtual work is no substitute for childcare. "You can't do two full-time jobs, so that's one of our rules. You need childcare in place first," he says.

But beyond that, each virtual worker's time is his own. And importantly, he says AT&T managers are adept at managing remotely and evaluating employees purely on results, not face time. "We find that the manager who can't manage remotely is not going to make it in the global-knowledge economy," Roitz says.

Many of AT&T's virtual workers see the program as a career-enhancer. "In the office, you're surrounded every day by the same people and that becomes your universe. But teleworkers have a much broader horizon — they can work just as easily with someone across the globe as in the same city," Roitz says. "It actually makes them more visible." ■

TELEWORKING AT A GLANCE**Sun**

Program: Internally called iWork (not to be confused with Apple's iWork trademark)

Primary equipment: Sun Ray thin clients

Percentage of employees who participate: Nearly 50% of Sun's 33,000 employees worldwide.

Annual savings: \$15 million in administrative costs, \$2.8 million in power costs, \$6.5 million on desktop updates and \$68.9 million in reduced real estate expenditures.

Productivity gains: Teleworkers on average work three more hours per day and give back 60% of their commute time to Sun.

Nortel

Program: Comprehensive mobility

Primary equipment: Laptops equipped with VoIP software

Percentage of employees who participate: 65% take regular advantage; 8% telework full time.

Annual savings: \$18 million in phone costs via VoIP; \$22 million in real estate costs.

Productivity gains: Average teleworker productivity is 15% higher.

AT&T

Program: The virtual office

Primary equipment: Laptop or traditional desktop PC with VoIP software

Percentage of employees who participate: 90% of managers, with 30% full-time, 40% between one and five days per week, and 20% once or twice per year.

Annual savings: \$30 million in reduced real estate costs.

Productivity gains: \$150 million annually in extra hours of productive work from teleworkers.

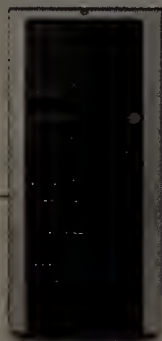
Our teleworkers say they are interrupted less frequently, they're better able to manage their time and they're better able to concentrate."

JOSEPH ROITZ, telework director, AT&T



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10 START-UPS TO WATCH

From automating IT functions to managing user identities, the hot technologies offered by these young companies may one day land them on the NW200.

■ BY NETWORK WORLD STAFF

NetworkWorld 2005 START-UPS WATCH

Azul Systems

Clarus Systems

Go Networks

Matisse Networks

OATSystems

OpTier

Ping Identity

Revivio

Univa

Virtual Iron

Azul Systems

Mountain View, Calif.

What does the company offer? The Azul Compute Appliance, which runs on custom-designed silicon that includes 24 cores on a chip, and virtual machine proxy software for application servers. The combo offloads demanding Java processing workloads from servers.

How did the company get its start? Former Nortel executives Gil Tene and Shyam Pillalamarri, and Scott Sellers, an entrepreneur and former Silicon Graphics engineer, founded Azul (originally named Chestnut Systems) in April 2002 to address performance bottlenecks that frequently are associated

with Java-based applications.

How did the company get its name? "Azul" is Spanish for blue, and CEO Stephen DeWitt has a passion for bright blue hues because he believes they emanate good feelings. When he talks about Azul, DeWitt uses a Big Blue/Little Blue analogy, positioning Azul as a company destined for something big.

How much funding does the company have? An undisclosed amount of funding from a variety of investors, including Accel Partners, Austin Ventures, ComVentures, Red Point Ventures and Worldview Technology Partners.

Who's leading the company? Stephen DeWitt, who has a long history in the systems, networking and consumer software industries. Most recently, DeWitt was vice president and general manager of content delivery and edge computing at Sun, which he joined in 2001 with Sun's \$2 billion acquisition of the bluish-named Cobalt Networks, the server appliance vendor he headed.

Who's using the product? Pegasus Solutions, Everett Consulting and EDS are among a handful of customers beta-testing the product. The appliance began shipping April 18.

Why is this company worth watching? Azul's goal is to create a nearly bottomless pool of compute power for Java-based applications, without forcing modification of those apps. If its appliance approach works, IT organizations could see the end of the costly practice of over-provisioning server resources.

— JENNIFER MEARS

Clarus Systems

San Francisco

What does the company offer? ClarusIPC, a software suite for IP telephony system testing.

How did the company get its start? Evan Powell, most recently director of network strategy at ThinkLink, a provider of IP messaging and communications software, founded the company in February 2001. He determined a product need based on his experience buying and managing wholesale VoIP minutes while an executive with Working Assets, a second-tier telecom carrier.

How did the company get its name? "When Clarus was founded, implementers of IP telephony were struggling to navigate the deployment process. Our customers say our products provide them with much-needed clarity," says CTO Richard Whitehead.

How much funding does the company have? \$18 million, including a \$10 million second round that closed in June 2004. Investors include Mobius Venture Capital, Trident

Ventures and Trinity Ventures.

Who's leading the company?

Brendan Reidy, a former vice president with security vendor Latis Networks.

Who's using the product? About 15 large IP telephony integrators, which the company did not name for competitive reasons.

Why is this company worth watching? The Clarus software suite lets product engineers or IT managers deploying IP PBXs and phones test call quality and check if phones are online without having to visit individual phones and sniff packets on various network segments. In other words, Clarus is attempting to address the growing problem of how to manage enterprise VoIP deployments by providing tools for testing, troubleshooting and configuration of enterprise IP telephony networks.

— PHIL HOCHMUTH

Go Networks

Mountain View

What will the company offer? Radio base stations for carrier-based wireless LANs (WLAN) and, ultimately, 802.16a-based WiMAX broadband access and backhaul services.

How did the company get its start? Entrepreneur Gideon Ben-Efraim, who earlier founded wireless radio equipment makers P-Com and Netro (the latter acquired in 2003 by SR Telecom), concluded that the high price of proprietary radios limited carriers' ability to deploy large-scale wireless services cost-effectively. So he teamed with Oz Leave, who had been joint head of a special intelligence technology unit with the Israeli Defense Forces, in September 2003 to solve the problem.

How did the company get its name? Selected by founders because it "implies the concept of mobility."

How much funding does the company have? \$20 million, in one round closed in September 2004. Major investors are Accel Partners, Apax Partners, Israel Seed Partners, Pitango Venture Capital and Siemens Venture Capital. A smaller investor is Benhamou



Global Ventures, with Eric Benhamou as Go chairman.

Who's leading the company? Gideon Ben-Efraim.

Who might use the product? Carriers, with mobile enterprise workers among ultimate beneficiaries. Company executives declined comment on product trials or target shipment dates.

Why is this company worth watching? Although Go is operating in stealth mode, the company is generating interest among industry watchers looking for next-generation WLAN developments. Go seems nearly alone among potential competitors in focusing first on 802.11/WLAN base stations that are designed specifically to meet carriers' demanding requirements for QoS, performance and reliability. Corporations ultimately will benefit from carriers' ability to offer services supporting longer ranges and greater capacities.

— JOHN COX

Matisse Networks

Mountain View

What will the company offer? An unnamed optical switch with geographically distributed components that operate logically as one unit.

How did the company get its start? Claude Hamou, who had been general manager of cable-modem pioneer Terayon Communication Systems' Data Cable Division, formed the company in January 2002 to address what he felt was an eight-year lack of innovation in network gear.

How did the company get its name? Named for the painter Henri Matisse because, like the French impressionist, founders see themselves as unconventional and viewing networking from a new perspective.

How much funding does the company have? \$21 million, in one round closed in September 2003. Backers are Menlo Ventures, Walden International and Woodside Fund.

Who's leading the company? Sam Mathan, formerly CEO of Amber Networks, which Nokia acquired in July 2001 for its fault-tolerant routing technology.

Who might use the product? The company expects to begin beta tests with large corporations in the fourth quarter of this year. It will target organizations that have data centers distributed on campuses or within metropolitan areas.

Why is the company worth watching? Matisse says its technology will increase the bandwidth of campus optical backbones dramatically — to greater than 1T bit/sec — with the goal of improving responsiveness of distributed data centers while simultaneously dropping the cost of doing so. This claim might easily be dismissed, were it not for the reputations of Hamou and Mathan, and the backing of credible venture firms.

— TIM GREENE

OATSystems

Waltham, Mass.

What does the company offer? The OAT Foundation Suite, which comprises five software modules for managing radio frequency identification (RFID) devices, data and processes.

How did the company get its start? Prasad Putta co-founded OATSystems with Sridhar Ramachandran, the company's chief architect, in April 2001 to help corporations capitalize on the use of RFID technology in supply chains.

How did the company get its name? Derived from oat, a staple of today's economy. The founders believe RFID technology likewise should be simple and pervasive.

How much funding does the company have? \$11.5 million, in one round closed in September 2003. The company says it isn't seeking to raise another round as it has

sufficient capital to fund current operations and planned growth.

Who's leading the company? Prasad Putta, who along with Ramachandran founded e-commerce payment provider Auripay, which anti-fraud technology vendor Cyota acquired in July 2001.

Who's using the product? 50 customers, including Best Buy, Del Monte Foods, Gillette, Kimberly-Clark, Kodak, Lowe's, Sherwin-Williams and Tesco.

Why is this company worth watching? From the start, OATSystems left the engineering of RFID tags and readers to others and put its development efforts into finding a use for RFID-generated data in enterprise networks. Its flagship software is designed to help companies make business sense of supply-chain data collected by RFID devices. An old-timer in a nascent enterprise market, OATSystems used its early entry to secure marquee enterprise customers before the competition got its act together.

— ANN BEDNARZ

OpTier

New York

What does the company offer? CoreFirst, software for managing transaction workloads across heterogeneous infrastructure tiers, such as Web and application servers, legacy systems and databases.

How did the company get its start? Three former Memco Software and Compuware executives founded OpTier in December 2002. Israel Mazin, chairman, co-founded Memco Software, a security vendor that after two acquisitions in 1999 became part of Computer Associates, which ultimately incorporated the company's technology into its eTrust security management suite. Yori Lavi, CEO, served as a chief architect at Compuware, where he was responsible for database products. And CTO Amir Alon headed up development at iRadius, a company dealing in Web site deployment. Before that, Alon served as chief architecture analyst at Memco.

How did the company get its name? Named for the problem the company plans to address. The software will automatically "optimize" performance across all "tiers" of the infrastructure based on pre-defined business priorities.

How much funding does the company have? \$16.1 million, including a \$7.5 million second round that closed in February 2004. Backers are Carmel Ventures, Lightspeed Venture Partners and Pitango Venture Capital.

Who's leading the company? Yori Lavi.

Who's using the product? A handful of unnamed companies have bought or are testing the software, including a Fortune 50 financial institution, a large cellular operator and a government agency.

Why is this company worth watching? OpTier faces stiff competition, especially from management heavyweights, but this newcomer puts an interesting twist on IT automation. OpTier stands out for first providing visibility into the transaction level of applications and services, and then by automatically allocating resources across heterogeneous environments based on pre-defined business priorities.

— DENISE DUBIE

Ping Identity

Denver

What does the company offer? PingFederate, an identity federation server; and PingDeploy, which lets vendors test a baseline level of conformance with the Security Assertion Markup Language (SAML) protocol. Ping also sponsors SourceID, an open source project for federated identity that supports Liberty Alliance, SAML and WS-Federation specifications.

How did the company get its start? Andre Durand, a

serial entrepreneur, founded Ping in January 2002 after spending 45 days on a boat in the Caribbean contemplating his "next move." Previously, Durand founded instant-messaging/presence vendor Jabber and helped incubate the Jabber Software Foundation. He also founded Durand Communications, a provider of client/server products for online databases and applications, which Webb Interactive acquired in 1998 for \$10 million.

How did the company get its name? Durand wanted an easy-to-remember, four-letter brand with an available URL. The technical side of "ping me" was an added bonus.

How much funding does the company have? No financial information has been disclosed as of press time, although the company says it expects to make an announcement regarding funding in May.

Who's leading the company? Andre Durand.

Who's using the products to date? Ping has partnership deals with IBM and RSA Security but, to date, has no customer references for PingFederate, which it released last month. Among other vendors, XML middleware leader DataPower uses PingDeploy. And, companies including American Express, Aon, Art Technology Group and the Canadian federal government have conducted 12,000 SourceID downloads.

Why is this company worth watching? Durand, who has become a recognized leader in the emerging identity market, deserves attention for attempting to stoke the identity market with Ping's release of PingFederate, for free. Users get the chance to connect PingFederate to an unlimited number of applications and process as many as 100,000 "identity transactions" before having to plunk down any cash. Ping calls this program "pay as you succeed."

— JOHN FONTANA

Revivio

Lexington, Mass.

What does the company offer? The Continuous Protection System 1200 appliance, which lets companies restore data instantly and recover applications from any point in time, minutes or hours ago.

How did the company get its start? Michael Rowan (CTO) and Kevin Rodgers (director of engineering), who are storage veterans from StorageCom and EMC, formed Revivio in October 2001 to develop the next generation of data protection and recovery products.

How did the company get its name? From revive I/O, which infers the ability to restore information in the event of a disk loss in just seconds, rather than the hours or days it normally takes.

How much funding does the company have? \$55.5 million, including \$25 million in a third round closed in January. Backers include Bessemer Venture Partners, Charles River Ventures, Eastward Capital Partners, Flagship Ventures, Globespan Capital Partners, Lighthouse Capital Partners and Nomura International.

Who's leading the company? Paul Lewis, formerly managing director of the World Economic Forum, CEO of Essential.com and an IBM consultant.

Who's using the product? Forbes.com, Jeffries and Co., and the University of New Mexico, among others.

Why is the company worth watching? In February, the Storage Networking Industry Association recognized continuous data protection technology with the formation of a CDP Special Interest Group. Storage vendors, old and new, are vying for a piece of the action — and Revivio is a well-positioned pioneer in this emerging market. Revivio is making a mark with its Continuous Protection System 1200 appliance, which differs from competitive products in that it is intended to retrieve block-based database and other data for enterprise-size data centers.

— DENI CONNOR

Univa*Elmhurst, Ill.*

What does the company offer? Grid computing consulting services. Enterprise-class services and support for the open source Globus tool kit are planned for mid 2005.

How did the company get its start?

Grid pioneers Ian Foster, Carl Kesselman and Steve Tuecke formed Univa in June 2004 in response to growing demand from customers, independent software vendors and systems integrators for commercial services and support for their open source grid software. The three co-founded the Globus

Alliance, originally known as the Globus Project.

How did the company get its name?

Founders wanted a short, pronounceable name that reflected their mission to let distributed resources work in unison. Univa plays on words like "unity" and "unison."

How much funding does the com-

pany have? Until now founders have bootstrapped development with some undisclosed angel funding, but are working on a first round of venture funding.

Who's leading the company? Steve Tuecke, who has been responsible for managing the architecture, design and development of the Globus software. Before co-founding Univa, Tuecke was with the Distributed Systems Laboratory at Argonne National Laboratory.

Who's using the consulting service?

Unnamed customers in the aerospace, defense, software and telecom industries.

Why is this company worth watching? As enterprise IT executives look into grid computing, they want management and interoperability. Enter Univa, which is preparing a commercial distribution of the open source Globus tool kit to give enterprise customers packaged, tested and certified software to use in setting up grids. This could go a long way in making grid truly part of next-generation IT architectures.

— JENNIFER MEARS



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Virtual Iron*Acton, Mass.*

What does the company offer? Virtual Iron VFe, a software-based virtual computing environment that lets multiple independent physical servers be combined into a single scalable symmetric multiprocessing virtual computer, due out this quarter.

How did the company get its start? Co-founded in March 2003 by storage veteran Scott Davis, most recently CTO at MangoSoft, and Alex Vasilevsky, who had been CTO at home media software vendor Ucentric Systems (acquired by Motorola). The pair wanted to bring virtualization capability to enterprise-size data centers.

How did the company get its name? Meant to illustrate the concept of virtualizing the iron — meaning, servers — in the data center.

How much funding does the company have? \$20 million, including \$12 million second round, closed in June 2004. Backers are Goldman Sachs, Highland Capital Partners and Matrix Partners.

Who's leading the company? Industry veteran John Thibault, who most recently was CEO of Convergent Networks.

Who's using the product? Unnamed organizations in aerospace, academics, biotech/pharmaceutical and financial services are beta-testing the product.

What makes this company worth watching? Server virtualization today is limited by scalability. Virtual Iron VFe will address the gap by letting corporations build large scalable symmetric multiprocessing servers from x86-based processor computers.

— DENI CONNOR

A deeper look

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A BUILDING YEAR

Most of last year's 10 Start-ups to Watch have made solid progress. We chart their accomplishments.

BY NETWORK WORLD STAFF

Company	Flagship product	Finances	12-month overview	Notes
Acquired				
TurnTide	TurnTide E-Series anti-spam router	Not applicable	• In July 2004, Symantec acquired TurnTide for approximately \$28 million.	<i>The TurnTide technology lives on in the Symantec Mail Security 8160 anti-spam gateway. David Brussin, TurnTide co-founder and CTO, is now a director of development at Symantec.</i>
Won widespread attention				
Mirra	Mirra Personal Server	No addition to the \$11.2 million reported as of March 2004.	• Launched Version 2.0, which includes two-way remote access, rolled out a data protection guarantee and reduced product prices. • Fleshed out executive management team, hiring a new CEO, vice presidents of marketing and engineering, and a CFO.	<i>Mirra has done well winning shelf space, with Mirra Personal Server now available in all Best Buy and Fry's Electronics stores, as well as through Dell.com, CompUSA Online and Amazon.com. The Mirra Personal Server remains a unique offering, with dynamic backup of multiple PCs and remote access to that saved data.</i>
Strengthened their positions				
Cassatt	Cassatt Collage, management software for server resource allocation and configuration	No addition to the \$35 million to \$50 million reported as of September 2003.	• Rolled out Collage Software for automated administration of pools of shared servers; Version 2.0, supporting Linux servers; and Version 3.0, targeting multitier application environments and supporting Windows servers. • Partnered with Ascential Software, Engenius Software, Informatica and Kx Systems for product marketing.	<i>Cassatt has hardware agnosticism in its favor, but it faces heavy-weight competition in the utility computing and server virtualization markets. Customers include the Department of Defense's Virginia Modeling Analysis and Simulation Center, and Pfizer Pharmaceutical.</i>
Cast Iron Systems	Application Router 1000, an application integration appliance	\$14 million secured in fourth round closed in February, bringing total to \$34 million.	• Added security options and support for processing large data files. • Ready the 3000, a model due in June that will target multidevice rollouts. • Expanded overseas presence by inking distribution deal with Japanese reseller CTC Itochu and by opening an office in Bangalore for work with systems integrators.	<i>Besides broadening its global sales channels, Cast Iron is growing its customer base with recent wins at British Telecom, Toyota and Visteon. In addition to the 3000 model, the company plans management software for June release. On tap for next year are vertical industry-focused integration appliances.</i>
Convoq	Convoq ASAP Web-conferencing service	No addition to the \$17.4 million reported as of November 2003.	• Released ASAP Express, a free two-way text/audio/video/screen/PowerPoint sharing application for "personal Web conferencing," and ASAP Pro, a Web-conference service with support for presence technology and new scheduling features.	<i>Convoq continues to challenge thinking about the way Web conferencing should be priced and made available to users. The company's software and services are thousands of dollars less than services such as Microsoft's Live Meeting and WebEx, and include innovative features such as real-time collaboration. New customers include BenefitPoint, California State University, The Washington Post and the University of Georgia.</i>
PanGo Networks	PanOS, location-aware engine	No addition to the \$6 million reported as of December 2003.	• Renamed PanGo Proximity Platform the PanOS, and released PanGo Locator, an 802.11-based asset tracking system that runs on top of it. • Named new CEO — Michael McGuinness, previously CEO of NuGenesis Technologies, a maker of scientific data management software. • Signed contracts with three healthcare-oriented resellers that will either include PanGo's software in their own products or build applications on it.	<i>PanGo continues to stress 802.11-based location-aware products and to extend a suite of applications that let customers deploy quickly instead of having to build their own. J. Paul Getty Museum recently became a customer, replacing audiotapes with wireless content delivery to visitors carrying museum-issued PDAs.</i>
Vontu	Vontu Prevent 4.0 and Vontu Monitor 4.0, secure content management tools	\$10 million secured in third round closed in March, bringing total to \$25 million.	• Released Vontu Prevent 4.0, which blocks transmission of sensitive data. • Partnered with encryption firm PGP, letting Vontu Monitor 4.0 work with encryption gateways. • Expanded executive team, hiring vice presidents of business development and sales, for instance.	<i>The company continues to battle against a growing field of competitors, with no vendor leading the field. Recent wins for Vontu include Charles Schwab and Prudential Financial.</i>
Refocused to improve growth				
Deepfile	StoredIQ 3.0, compliance and security platform for files and e-mail	\$3 million secured in second round closed in October 2004, bringing total to \$5 million.	• Changed name from Deepfile to StoredIQ, and refocused product line in an attempt to transform itself into a compliance-management company. • Introduced HIPAA Solutions Pack, a compliance tool for healthcare organizations.	<i>With compliance being a huge market focus, StoredIQ faces strong competition from established companies and start-ups alike. StoredIQ is making progress with the several healthcare institutions beta-testing the product. It signed Blue Cross Blue Shield of Arizona as a customer in April.</i>
Strix Systems	Access/One Network, for indoor and outdoor wireless mesh networks	\$5 million contributed to facilitate launch of outdoor product, bringing total to \$39 million.	• Added support for virtual LANs and QoS to core wireless mesh software, and rolled out a model for outdoor nets. • Upped the number of resellers to 120 worldwide, most recently signing on IP MobileNet.	<i>With resellers adapting the Access/One Network indoor product for outdoor use, Strix management identified outdoor wireless mesh as a key growth area. Municipal network providers and wireless ISPs are the main targets. Other mesh vendors are trying to ride the same wave, which Strix insists is a big one. Enterprise customers include Home Depot and Intercontinental Hotel in Atlanta.</i>
Stuck in limbo				
Bluewave Networks	Infrastructure Analytics and Management System (INAMS) route-analytics software	Continues to be privately funded; amount undisclosed.	• Potential strategic relationship with large network vendor falls through, leaving Bluewave without the sales and marketing expertise it had hoped to gain. (Company executives acknowledge having received and used an unspecified amount of funding from this vendor.) • No referenceable customer wins, leaving the company with just "a few" customers. • New version of INAMS scheduled to be released in May, updated to include Web application analytics.	<i>Despite its troubles, Bluewave is considered by Forrester Research (as of August 2004) to be among the top three vendors in the burgeoning route-analytics market. By adding new features, Bluewave could maintain its position, but without additional funding or significant customer wins, the company will continue to face growth challenges. As more management heavyweights enter the market, look for the eight-employee company to partner, forge licensing deals or position itself for acquisition.</i>

Security counterattack Reader - Message (Plain Text)

From: NW on Security
To: Reader
Subject: Security counterattack

Security counterattack

Four experts share the latest research-and-development news.

By Sandra Gittlen

Network World Security Newsletter

If you think re-architecting your IT infrastructure with new data center technologies will help protect your company over the next decade - think again. Experts at academic and vendor research labs around the country agree the move toward an automated, on-demand, virtualized computing environment will increase the complexity of security.

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'THE NETWORK MAVERICK' AND THE NEXT BIG THING

Mergers and acquisitions in the network industry could be fodder for a reality TV show, with network executives as the judges.

■ BY JULIE BORT

One of my secret little indulgences is watching the reality TV show "The Apprentice." Seems to me, the network industry's merger-and-acquisition activity could be the basis for an "Apprentice"-like spin-off. Maybe I'd call it "The Network Maverick" — because our industry is flush with unconventional vendor pairings led by flamboyant dealmakers. I'm envisioning a show in which each episode documents a transaction's progress, complete with backstabbing executive wars and rabid shareholder proxy fights all leading up to the "You're fired!" boardroom final scene. (Wouldn't you just love to see former HP CEO Carly Fiorina or ex-PeopleSoft CEO Craig Conway as guest stars?)

After the boardroom scene it would be time to pull on viewers' heartstrings. Pan to a black limo. Inside it, the lone, rejected ex-CEO would sit, head bent, as the car drives off to the newly paid-off, multimillion "golden parachute" villa in the hills. Not quite the same as watching disgraced CEOs leaving the job in handcuffs, but the fallout from corporate mergers can provide fascinating footage all the same.

"The Network Maverick" 2005 season undoubtedly would include many cliff-hanger episodes, along the lines of juicy deals like SBC/AT&T, Verizon/Qwest/MCI and Microsoft/Groove Networks. Now that acquisitions are clearly back in favor, a good number of vendors may grow more interested in playing to their potential acquirers (other vendors) than to their potential customers. Another book-cooking theme might even crop up in some future "Network Maverick" season. So I'd set the show up to include a panel of network executives acting as "judges" on the deals, too — "American Idol"-style.

Judges wouldn't have voting rights over

the deals in progress (those would be for board members and stockholders alone). But they could offer objective analysis on the potential merits and pitfalls of each deal and tell the audience when they thought the numbers seemed cooked. They could point out to the audience how mergers between midsize companies often indicate that a particular technology niche has moved past puberty and is officially mature and the only way to grow the business is to buy a competitor (Oracle/PeopleSoft) — or to partner with a somewhat unlikely mate so it can move into new markets (Symantec/Veritas Software). Judges also could articulate the perils of such business strategy pointing out that failures might take years to materialize (HP/Compaq).

The show's judges also would help keep the audience from becoming bedazzled by flashy figures, such as potential layoff numbers and revenue for the combined new company. Instead, they would dissect product promises — the most important offspring of any corporate marriage. They could analyze how the vendor intends to



KERRY KOZACZUK

Technology M&A activity 2002-2004

Year	Total deals	Average size of declared deals
2002	1,919	\$84 million
2003	1,455	\$90 million
2004	1,951	\$262 million

Source: 451 Group Technology M&A Database

M&A madness

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integrate technologies and — especially — how fast it expects to deliver these products.

"Network Maverick" episodes that follow the acquisitions of start-ups would indicate to the judges what the vendor thinks will be the Next Big Thing. Vendors aren't always right on this count, of course, but when one vendor plunks down a surprisingly large

amount for a start-up, judges would see this as a potential sign of an infant disruptive technology.

"Network Maverick" viewers over time also might come to realize that the highest-profile, largest-valued deals might be the least of the customer's long-term concerns. Mergers among aging companies often indicate a niche so mature that it has become commoditized, with little chance for growth and unimagined low prices. Such deals, while climactic, aren't where the real ratings are. But they do help the industry enjoy the show. ■

Integrating wireless with security appliances

■ BY JOANIE WEXLER

Check Point's recent launch of a security appliance bundled with a wireless LAN access point brought to mind an old question: With product integration all the rage, which core competency do you focus on when purchasing a multifunction product?

This is not the first time this issue has come up. WLAN maker Aruba Wireless Networks made sweeping network security announcements that seemed to spill outside its primary area of expertise. At the time, Aruba feared that people would start thinking of it as a security company, rather than as the wireless-centric company that it is. But, in fact, all the WLAN vendors have had to focus so hard on solving security problems over the past few years that they've almost become default security experts out of necessity.

However, I don't believe that the reverse is true — that it can be assumed that security companies can necessarily claim strong wireless expertise. Given that security and

wireless both rank very high on enterprise strategic agendas, the question emerges: For small and midsize shops, do you purchase an integrated security appliance with wireless access point, or do you go best-of-breed on each and purchase separate product lines, albeit at a higher total cost of ownership?

I don't think there's a one-size-fits-all answer. First, chat up the security appliance vendors and see if any seem to have the wireless expertise, architecture, features and vision that satisfy you. Are you buying the product first and foremost for a strong WLAN platform from a company steeped in RF expertise? Or are you primarily seeking a multilayered, centrally managed enterprise-wide network security platform, with wireless access as a "nice to have"?

If the wireless component is secondary and if the site you are trying to wirelessly enable isn't likely to grow beyond a few access points, consider the following hybrids:

- Check Point's VPN-1 Edge W series of

wireless appliances, announced last week, which combine 802.11b/g/SuperG (108M bit/sec)-capable access points with firewall and VPN (IPSec encryption) capabilities, WAN links and hot failover between redundant boxes or between two ISP connections on one box.

- Fortinet's FortiWiFi-60, which combines network-based anti-virus, firewall, content filtering, VPN, intrusion detection and prevention, traffic shaping and dual WAN links. The appliance conducts full content reassembly by first buffering fragments of sessions, in case a hacker attempts to send malicious signatures in segments, says Phil Kwan, Fortinet's director of product management. It also checks HTTP Port 80, FTP and e-mail protocols for IEEE behavior compliance to make sure infections are not being tunneled through these ports, he says.

- SonicWall's TZ170 and SOHO TZ line of hybrid VPN encryptors, firewalls and 802.11b and 802.11b/g access points, which also support intrusion detection and prevention. The products also monitor

for rogue access points, something the other two companies' products don't do, requiring you to purchase a separate sensor network for this function.

Prices start at about \$700 to \$800. All three vendors provide distributed enterprises with centralized management and reporting systems, allowing management to scale to thousands of devices across many distributed sites.

Wexler is an independent network technology writer/editor in Silicon Valley who has spent most of her career analyzing trends and news in the computer network industry. She can be reached at joanie@jwexler.com.

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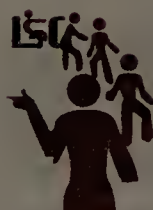


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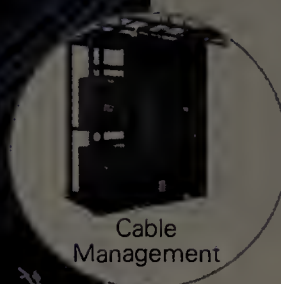


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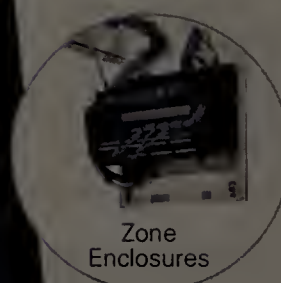
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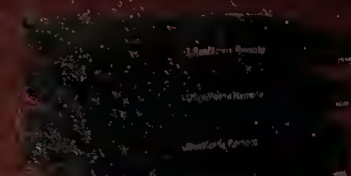
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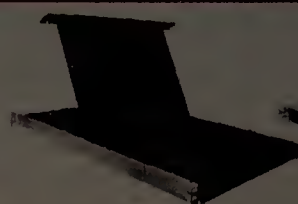
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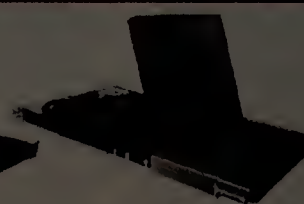
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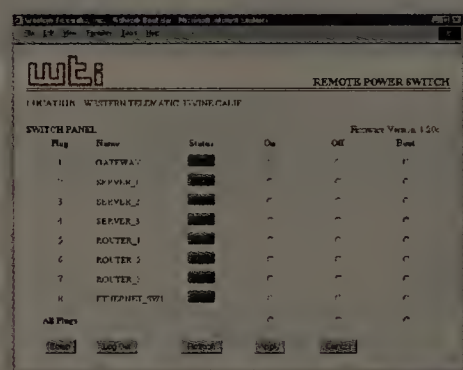
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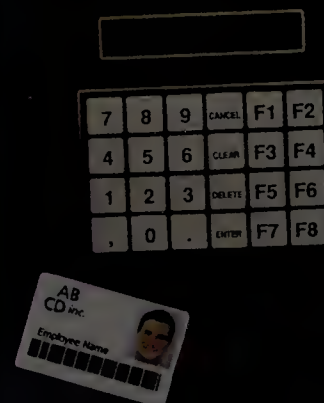
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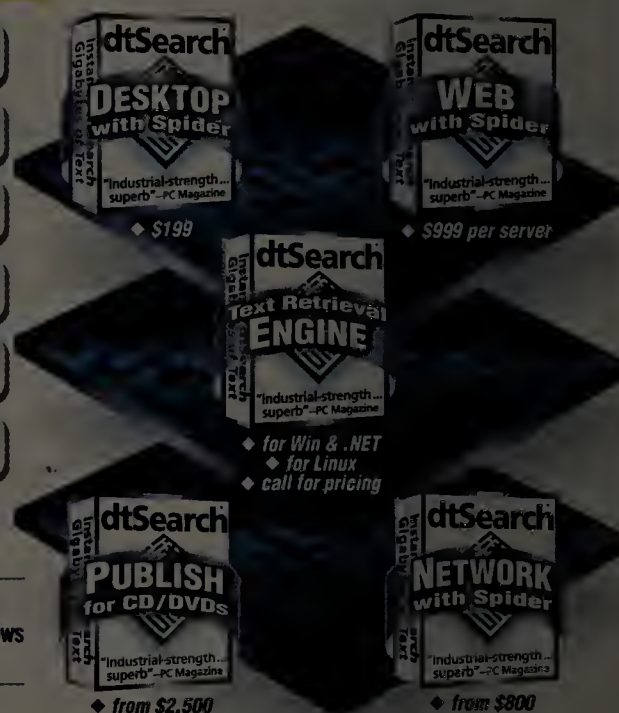
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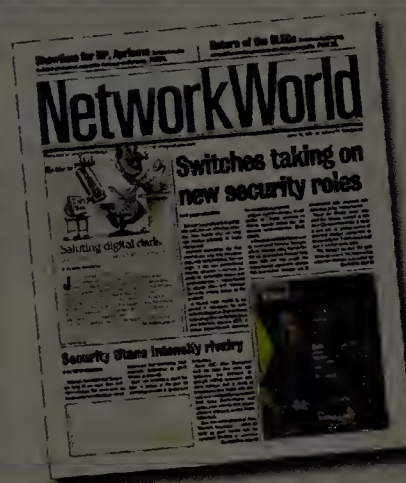
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BackSpin Mark Gibbs



RIP (Rest in Process)

My mother-in-law is dead. She told me so. She said that according to the Social Security Administration she is no more. She ceased to be. She expired and went to meet her maker. A stiff. Bereft of life, she rests in peace. Except that she quite obviously doesn't.

In fact, she's more than a little annoyed about it.

As far as can be determined, this bizarre state of affairs came about through the Social Security Administration randomly sending her through the Pearly Gates. Not surprisingly, after that things started to go wrong.

Filing taxes turned out to be a problem because dead people aren't expected to do anything of the sort. So when her accountant attempted to file her tax return electronically, the IRS's computers refused to accept the transaction.

My guess is that my mother-in-law expired at the hands of an incompetent data entry clerk. According to RootsWeb.com (www.nwfusion.com, Doc Finder: 6854), the date of her demise was in May 2003 but her Social Security payments stopped in September 2004 when someone with exactly the same name died.

It would appear that my mother-in-law's inaccurate demise isn't unusual in government circles. In fact, it

happens so often that the Social Security Administration has a policy on how to deal with what it calls "Erroneous Death Termination" (DocFinder: 6855).

This policy states that anyone who decides he is not dead "must give identifying information to have SSI benefits reinstated unless the termination is due to an obvious administrative error." Would someone standing in front of you saying "I'm not dead, dammit!" constitute proof of an administrative error? Apparently not to the Social Security Administration.

The policy continues: "When the death termination is due to a false report, the field office (FO) must conduct a face-to-face interview and obtain acceptable identifying (ID) information to reinstate benefits."

Now I can understand that the Social Security Administration is a very complex system, and a rigorous process for raising the dead is obviously part of the checks and balances needed to deter and prevent fraud. The problem is that for the individual, the end result is that if the government says you are dead it's your problem to solve.

So my mother-in-law wound up at the local Social Security Administration office with the required documentation and convinced the field office she was very much alive. While the field office had to admit she was still on this mortal coil, the federal government's computers weren't so easily convinced. It looks like my mother-in-law's fight to escape from

administrative limbo might take a while.

What we have in the Social Security Administration is a system of staggering complexity that has been engineered to prevent mistakes. The result is that when mistakes are (inevitably) made, the system isn't willing to admit to its own fallibility. Worse still, there's no effective human control element — once the system is up and running it becomes self-maintaining (rather reminiscent of Skynet in the "Terminator" movies), and process is everything.

It isn't just the government that creates nightmarish management systems that swallow their clients; just think of how your problems are (or rather aren't) handled by telephone companies, banks, mortgage companies ... the list is endless. Almost all very large companies build systems that remove people from the responsibility of managing the business.

I have a couple of questions for you. First, is this disconnect from your customers happening or has it happened in your company? Second, can you change the model before your company loses its soul and stops dealing with humans and starts managing statistics?

Send your condolences to my mother-in-law at backspin@gibbs.com. And have you read Gearblog (www.nwfusion.com/weblogs/gearblog) this week?



'Net Buzz News, insights, opinions and oddities

By Paul McNamara

We're not for sale

For the past half-hour I've been staring out the window trying to imagine a way

to address this topic without seeming defensive or making it sound too personal.

Can't be done: This *is* personal and I *am* defensive — with good cause, in my judgment.

Two weeks ago I wrote a column suggesting that MCI would be foolish to spurn Verizon in favor of Qwest.

Verizon paid me nothing to make that case, nor did it pay *Network World* to have me make it.

Three weeks ago I wrote a mildly flattering column about a little-known company called KnowNow and its designs to make RSS a big deal in corporate networks.

KnowNow paid me nothing but the courtesy of a telephone interview.

What I am trying to say is that we are not on the take here at *Network World* ... and the reason I'm feeling the need to say what should be obvious is that such is not the case elsewhere in the media. A front-page story in last Tuesday's *Wall Street Journal* exposed what apparently is a common practice among "experts" quoted in television news reports, including individuals who bill themselves as technology journalists.

In a nutshell, these hucksters masquerading as independent commentators solicit payments from vendors in exchange for promising to mention the vendors' products on local television news programs. The mentions are invariably positive, while the financial arrangements are not revealed to the TV audience.

In other words, paid skills are being pawned off on an unsuspecting public as unbiased commentators.

These charades have even spilled over into TV's national morning shows, either through lax or non-existent ethical standards on the part of the programmers, or

a failure on the part of the skills to disclose their financial conflicts.

Among the most egregious examples is Corey Greenberg, the so-called "tech editor" for NBC's "Today Show," and a former editor and writer for audio magazines. Greenberg has charged companies \$15,000 apiece to plug their products on what this cottage industry calls "satellite media tours," which make putative "experts" available to news broadcasters. His paying clients have included Apple, HP, Sony and Seiko-Epson.

According to the *Journal* story: "Mr. Greenberg says his business resembles a magazine that collects money from advertisers and then reviews products marketed by the same companies. He says he can maintain a wall between his business and his editorial practices. 'I am a one-man magazine,' he says."

Greenberg's business resembles a real magazine — an ethical one — in much the same way that I resemble Brad Pitt, which is to say only in our respective dreams.

Being paid to flog a product on television — or in print, for that matter — is honest work when conducted above board and fully disclosed to viewers and readers. But that's not what Greenberg and his ilk are doing. They are passing themselves off as unbiased experts when they are in fact nothing of the sort.

Why bother to point this out here? Don't savvy readers who know *Network World* already take for granted that we're on the up and up?

We'd like to believe so, but not all readers are savvy or know us well. It's not uncommon for some who find fault with our news coverage or the opinions expressed in columns such as this one to accuse us of being in the pocket of this or that advertiser. So why wouldn't someone reading that *Journal* article suspect — or even presume — that such practices are accepted widely throughout the print media as well in television?

They aren't accepted here.

Next week I promise to climb down off the soapbox and get back to writing about technology. E-mail to buzz@nww.com.

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